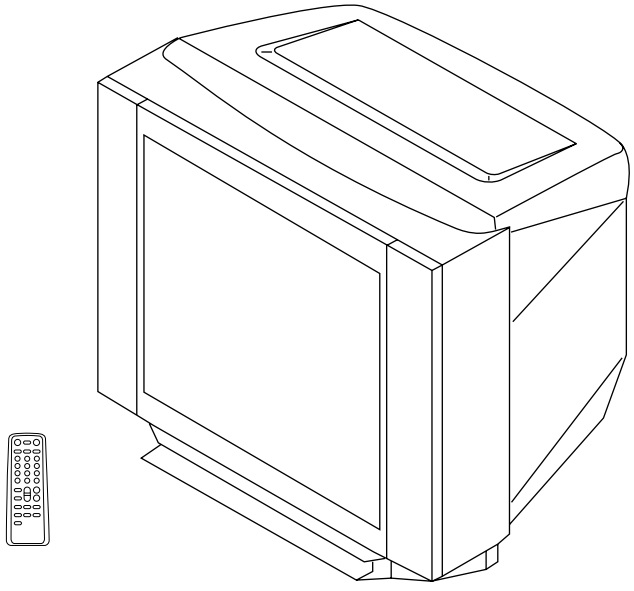
Self Diagnosis
Supported model

SERVICE MANUAL

BG-3S CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-XF21M61	RM-952	GE	SCC-U12H-A
KV-XF21M63	RM-952	Thailand	SCC-U18E-A
KV-XF21M65	RM-952	GE	SCC-U12G-A
KV-XF21M80	RM-952	E	SCC-U13C-A
KV-XF21M90	RM-952	Hong Kong	SCC-U17D-A

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-XF21M30			



MICROFILM

MC-Service

TRINITRON® COLOR TV

SONY®

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo/Bilingual system	NICAM Stereo / Bilingual B/G, I: A2 Stereo / Bilingual (German) B/G	Except KV-XF21M80
Teletext language	English, Arabic, French	KV-XF21M61/XF21M65 only
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84	
┐┌ (Antenna)	75-ohm external terminal	
Audio output	5W + 5W	KV-XF21M61/XF21M80/ KV-XF21M90
	3W + 3W	KV-XF21M63/XF21M65
3D WOOFER	9W	KV-XF21M63/XF21M65 only
Number of terminal		
(Video)	Input: 2 Output: 1	Phono jacks; 1 V_{P-P}, 75 ohms
≥ (Audio)	Input: 2 Output: 1	Phono jacks; 500 mVrms
(Headphone)	Output: 1	Minijack
Picture tube	21 inch	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
Dimension (w/h/d, mm)	640 × 456 × 488	KV-XF21M61/XF21M80/ KV-XF21M90
	640 × 470 × 488	KV-XF21M63/XF21M65
Mass (kg)	27	KV-XF21M61/XF21M80/ KV-XF21M90
	29	KV-XF21M63/XF21M65

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.
The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

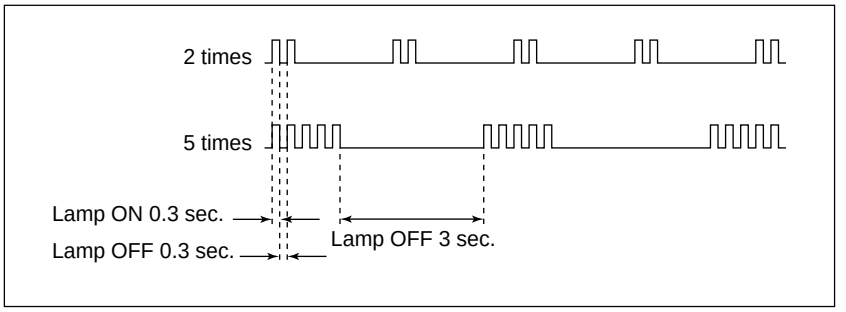
When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

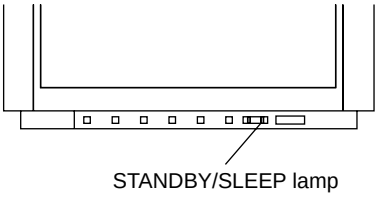
Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F4601 (F)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP) or overvoltage (OVP) • Vertical deflection stopped • Horizontal deflection overdrive	2 times	002:000 or 002:001~255 003:001~255 004:001~255 at the same time	• H.OUT Q511 is shorted. (A board) • IC701 is shorted. (C board) • -13V is not supplied. (A board) • IC 503 faulty (A board)	• Power does not come on. • Load on power line is shorted. • Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~225	• G2 is improperly adjusted. (Note 2) • CRT problem. • Video OUT IC701 is faulty. (C board) • IC301 is faulty. (A board) • No connection A board to C board.	• No raster is generated. • CRT cathode current detection reference pulse output is small.
• Micro reset	—	101:00 or 101:001~225	• Discharge CRT (C Board) • Static discharge • External noise	• Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.
Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT





Diagnostic Item	Flash Count*
+B overcurrent/overvoltage Vertical deflection stopped	2 times
White balance failure	5 times

* One flash count is not used for self-diagnostic.

3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

[To Bring Up Screen Test]

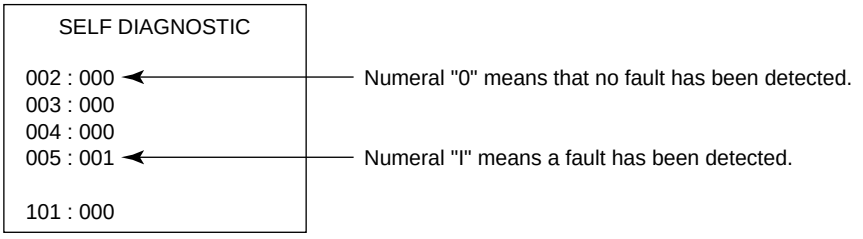
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON

⇧

Note that this differs from entering the service mode (mode volume +).

Self-Diagnosis screen display


SELF DIAGNOSTIC
002 : 000
003 : 000
004 : 000
005 : 001
101 : 000
Numeral "0" means that no fault has been detected.
Numeral "I" means a fault has been detected.

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

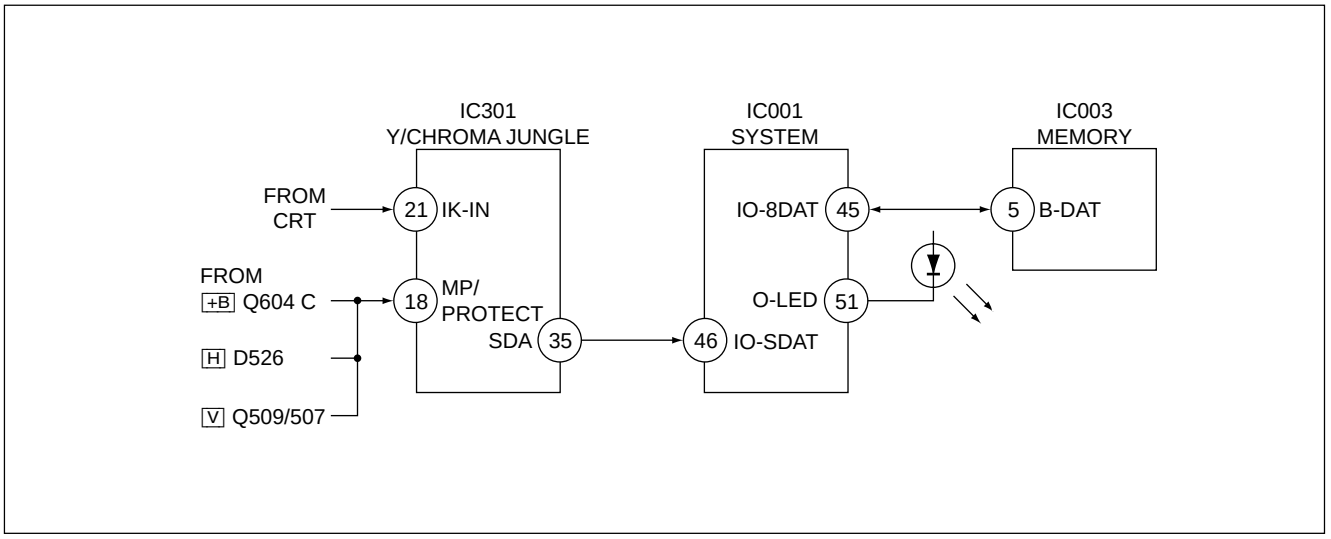
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel 8 ➡ 0

[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



+B overcurrent (OCP)	Occurs when an overcurrent on the +B(135) line is detected by Q604. If Q604 go to ON and the voltage to pin 18 of IC301 should go down when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.
Horizontal deflection overdrive	Occurs when an overdrive on H drive line is detected by D526. Power supply will be shut down when detect it.
Vertical deflection stopped	Occurs when an absence of the vertical deflection pulse is detected by Q509 and IC001 shut down the power supply.
Vertical deflection overcurrent	Occurs when an overcurrent on V drive line is detected by Q507. Power supply will be shut down when detect this by IC001.
White balance failure	If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture.

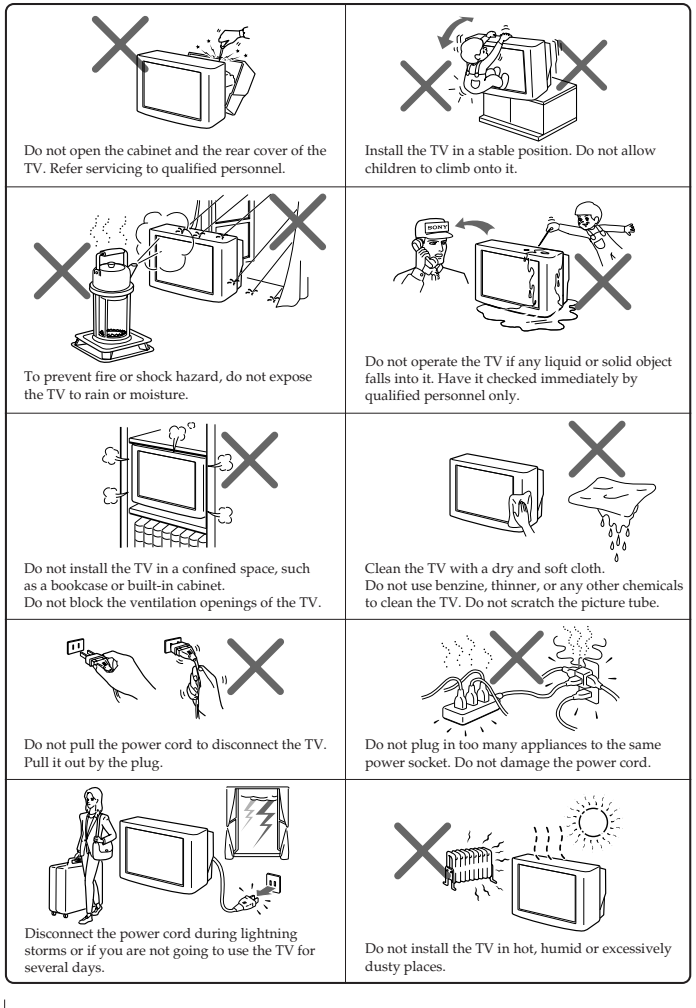
* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

WARNING

- Dangerously high voltages are present inside the TV.
- Operate the TV only between 110 – 240 V AC.



Do not open the cabinet and the rear cover of the TV. Refer servicing to qualified personnel.

Install the TV in a stable position. Do not allow children to climb onto it.

To prevent fire or shock hazard, do not expose the TV to rain or moisture.

Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.

Do not install the TV in a confined space, such as a bookcase or built-in cabinet.
Do not block the ventilation openings of the TV.

Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.

Do not pull the power cord to disconnect the TV. Pull it out by the plug.

Do not plug in too many appliances to the same power socket. Do not damage the power cord.

Disconnect the power cord during lightning storms or if you are not going to use the TV for several days.

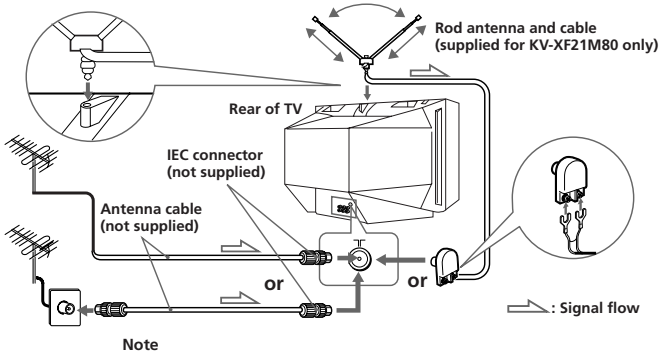
Do not install the TV in hot, humid or excessively dusty places.

Getting Started

Step 1

Connect the antenna (KV-XF21M80 only)

If you wish to connect a VCR, see the "Connecting a VCR" diagram below.

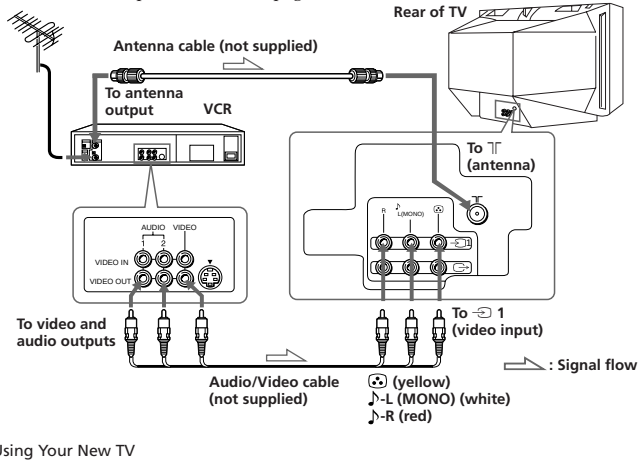


Note

- You are advised to use an outdoor antenna for better reception.

Connecting a VCR

To watch the video, press ⊖ ⊕ (see page 13).



Getting Started

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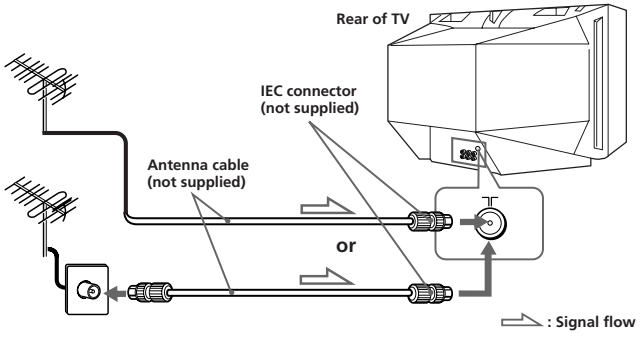


Notes

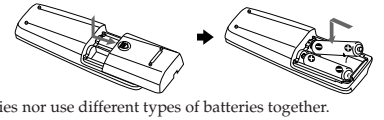
- If you connect a monaural VCR, connect the yellow plug to (the yellow jack) and the black plug to ♪-L (MONO) (the white jack).
- If you connect a VCR to the (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When no signal is input to the connected video equipment, the TV screen becomes blue.

CAUTION

Do not connect the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.

Step 2

Insert the batteries into the remote

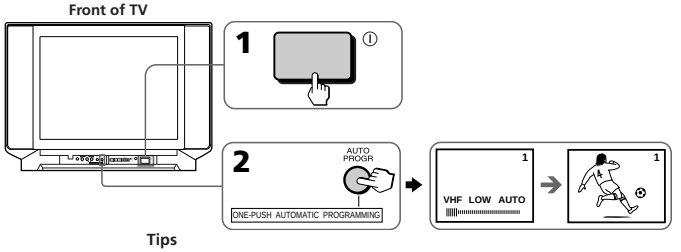


Note

- Do not use old batteries nor use different types of batteries together.

Step 3

Preset the channels automatically

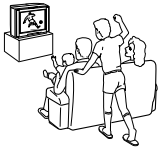


Tips

- If you want to stop automatic channel presetting, press SELECT twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 10).

Now You Are Ready. . .

To watch your TV, see page 12.

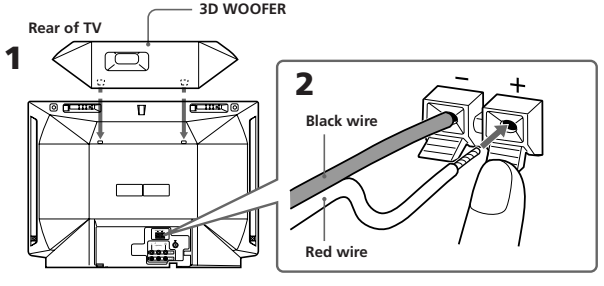


MC-Service

Connecting the 3D WOOFER

(KV-XF21M63/XF21M65 only)

You can enjoy high quality sound by connecting the 3D WOOFER.



1 Attach the 3D WOOFER into the footholds on the top of your TV.

2 Connect the wires to the 3D WOOFER (8Ω) terminals at the rear of your TV. The red wire should be connected to the ⊕ red terminal and the black wire to the ⊖ black terminal.

Notes

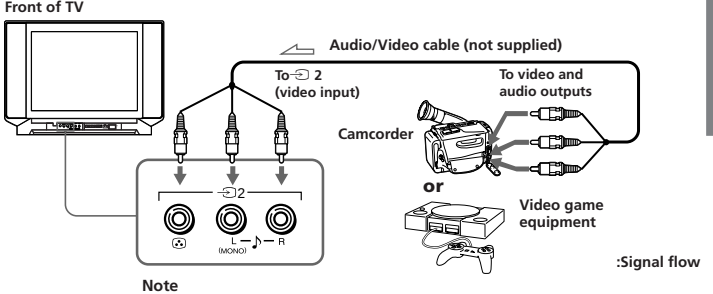
- Connect only the supplied 3D WOOFER; otherwise your TV may malfunction.
- Unplug your TV from the wall outlet when connecting the 3D WOOFER.
- To prevent a malfunction caused by a short circuit of the terminals, make sure that none of the 3D WOOFER wire strands stick out, making contact with the neighbouring speaker terminal.

Connecting optional components

You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game or stereo system.

To watch the picture of the connected equipment, press ⇨ ⊕ (see page 13).

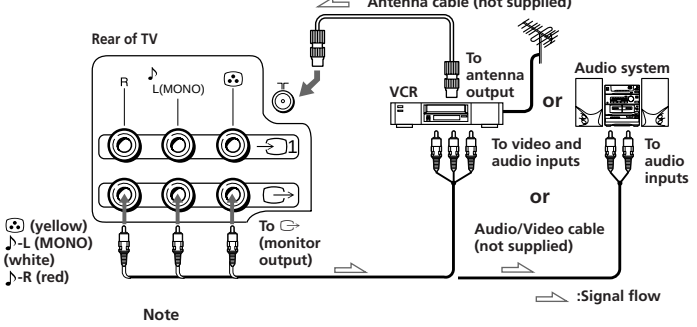
Connecting a camcorder/video game equipment using the ⇨ (video input) jacks



Note

- You can also connect video equipment to the ⇨ 1 (video input) jacks at the rear of your TV.

Connecting audio/video equipment using the ⇦ (monitor output) jacks



Note

- When connecting a monaural VCR, connect the yellow plug to (the yellow jack) and the black plug to ♪ -L (MONO) (the white jack).

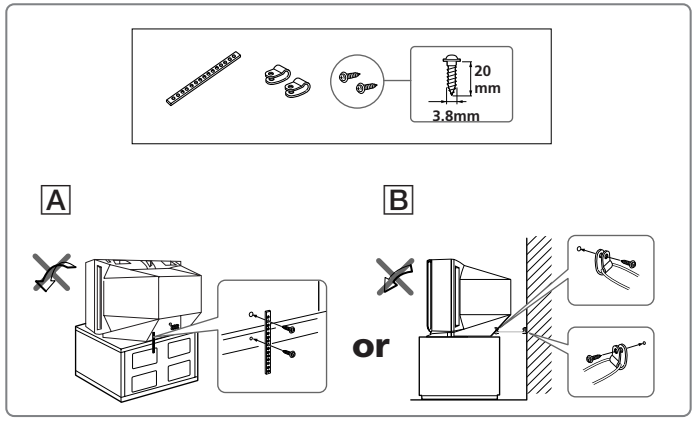
Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the band to the TV stand and to the rear of the TV using the provided hole.

or

B Put the cord or chain through the clamps to secure the TV against a wall or pillar.

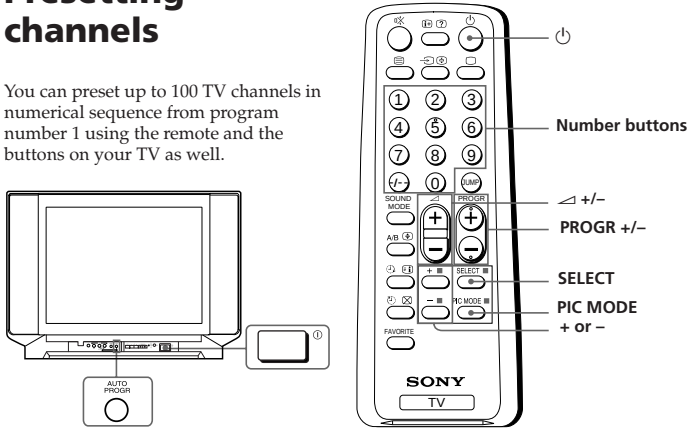


Note

- Use only the supplied screws. Use of other screws may damage the TV.

Presetting channels

You can preset up to 100 TV channels in numerical sequence from program number 1 using the remote and the buttons on your TV as well.



Presetting channels automatically

1 Press ⏻ to turn on the TV.

2 Press AUTO PROGR.

To preset channels automatically from a specified program number

(1) Press SELECT until "AUTO PROGRAM" appears.

(2) Press + or –.
The on-screen display will start flashing.

(3) Press PROGR +/– or the number buttons until the desired program number appears.

(4) Press + or –.

continued

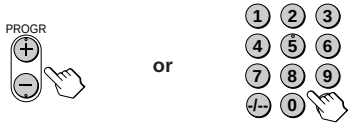
MC-Service

Presetting channels manually

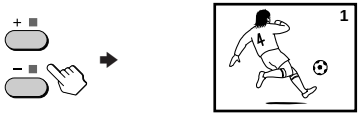
1 Press SELECT until "MANUAL PROGRAM" appears.

2 Press + or –.

3 Press PROGR +/– or the number buttons until the desired program number appears.



4 Press + or – until the desired channel picture appears.

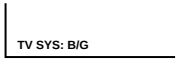


5 Press SELECT.

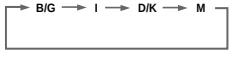
To change the TV system setting

If the picture or sound is abnormal when receiving programs through the ⅂ (antenna) terminal

(1) Press SELECT until "TV SYS" appears.



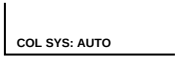
(2) Press + or – to select the appropriate TV system until the picture or sound quality is optimal.



To change the color system setting

If the color is abnormal when receiving programs through the ⅂ (antenna) terminal or the ⇦ (video input) jack

(1) Press SELECT until "COL SYS" appears.



(2) Press + or – to select the appropriate color system until the color is optimal.

Tip

- Normally set "COL SYS" to "AUTO".

Skipping program numbers

1 Press PROGR +/– or the number buttons until the unused or unwanted program number appears.

2 Press SELECT until "MANUAL PROGRAM" appears.

3 Press + or –.

4 Press PIC MODE.

5 Press SELECT.

To preset the skipped program number again

Preset the channel automatically or manually.

Tip

- You can also use SELECT and ◿ +/– on the TV to preset channels and skip program numbers.

To use the fine tuning (FINE) function

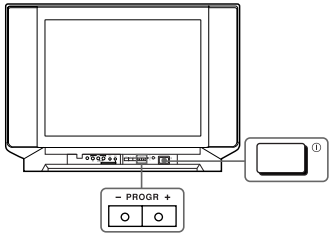
The fine tuning (FINE) function may help to reduce the following problems: incomplete Teletext display (KV-XF21M61/XF21M65 only), double images and lines moving across the TV screen.

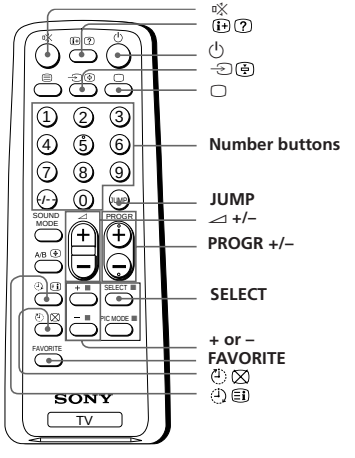
You can use the fine tuning function as below:

(1) Select the program number you want to adjust.
(2) Press SELECT until "MANUAL PROGRAM" appears on the screen.
(3) Press + or – on the remote control once.
(4) Press ⓘ ? to display "FINE" on the screen.
(5) Press + or – continuously until the above problems are minimized.
The + or – icon on the screen flashes while tuning.
(6) Press SELECT to return to normal screen.

Watching the TV

This section explains functions used while watching the TV. Most operations can be done using the remote.



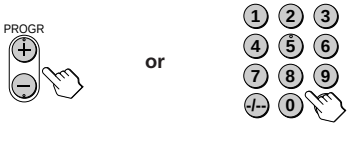


1 Press ⏻ to turn on the TV.

When the TV is in the standby mode (the ⏻ indicator on the TV is lit red), press ⏻ on the remote or PROGR +/– on the TV.

2 Press PROGR +/– or the number buttons to select the TV program.

For double digit numbers, press -/--, then the number (e.g., for 25, press -/--, then 2 and 5).



3 Press +/– to adjust the volume.

Additional tasks

To	Do this
Turn off temporarily	Press ⏻. The ⏻ indicator on the TV lights up red.
Turn off completely	Press ⏻ on the TV.
Mute the sound	Press 🔇.
Watch the video input (VCR, camcorder, etc.)	Press ⏎ to select "VIDEO 1" or "VIDEO 2". To return to the TV program, press 🖵.
Jump back to the previous channel	Press JUMP.
Display the on-screen information*	Press ⓘ.
Adjust the volume of each TV program automatically	Press SELECT repeatedly until "INTELLIGENT VOL" appears, then press + or – to select "ON". To cancel, select "OFF".

* The picture, sound, and either the program number or video mode are displayed. The on-screen display for the picture and sound information disappears after about 3 seconds.

Changing the on-screen display language (KV-XF21M61/XF21M65/XF21M90)

1 Press SELECT until "LANGUAGE / 语言: ENGLISH" appears on the screen.

2 Press + or – to select " 中文 ".

Tip

- You can also use SELECT and +/– on the TV to select the on-screen display language.

continued

MC-Service

Changing the on-screen display language (XF21M63)

1 Press SELECT until "LANGUAGE / ภาษา : ENGLISH" appears on the screen.

2 Press + or – to select " ไทย ".

Tip

- You can also use SELECT and +/– on the TV to select the on-screen display language.

Using Your New TV

Changing the on-screen display language (KV-XF21M80)

1 Press SELECT until "LANGUAGE / اللغة : ENGLISH"appears on the screen.

2 Press + or – to select " عربي ".

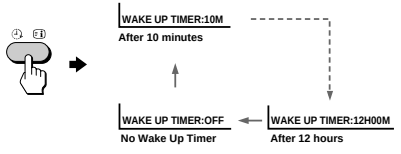
Tip

- You can also use SELECT and +/– on the TV to select the on-screen display language.

continued

Setting the Wake Up timer

1 Press ⏲ ⊟ until the desired period of time appears.



2 Select the TV program or video mode you want to display when you wake up.

3 Press ⏻ or set the Sleep timer if you want the TV to turn off automatically.

The ⏲ indicator on the TV lights up orange.

To cancel the Wake Up timer

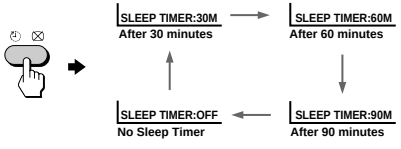
Press ⏲ ⊟ until "WAKE UP TIMER: OFF" appears or turn off the TV's main power.

Notes

- The Wake Up timer starts immediately after the on-screen display disappears.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into the standby mode. To continue watching the TV, press any button or control on the TV or the remote.

Setting the Sleep timer

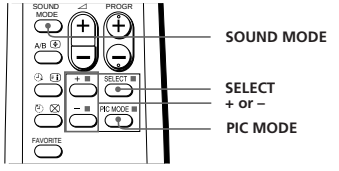
Press ⏲ ⊠ until the desired period of time appears.



To cancel the Sleep timer

Press ⏲ ⊠ until "SLEEP TIMER: OFF" appears or turn the TV off.

Customizing the picture and sound



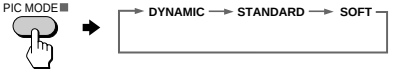
You can customize the picture and sound by selecting the picture and sound modes or by adjusting its settings.

You can change the sound effect by selecting the surround mode.

Selecting the picture and sound modes

To select the picture mode

Press PIC MODE repeatedly until you get the desired picture mode.



Select	To
DYNAMIC	receive high contrast pictures.
STANDARD	receive normal contrast pictures.
SOFT	receive mild pictures.

To select the sound mode

Press SOUND MODE repeatedly until you get the desired sound mode.

Select	To
DYNAMIC	listen to dynamic and clear sound that emphasizes the low and high sound.
DRAMA	listen to sound that emphasizes vocals and background music.
SOFT	receive soft sound.

continued

MC-Service

Adjusting the picture and sound settings

1 Press SELECT until the desired setting appears.

Each time you press SELECT, the setting item will change as follows:

2 Press + or – to adjust the item.

3 To adjust other items, repeat steps 1 to 2.

* "HUE" can be adjusted for the NTSC system only.

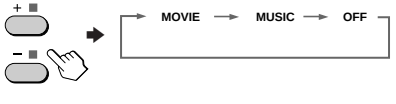
Notes

- When you select a picture or sound mode, the adjusted settings will be reset according to the selected mode.
- You can also use SELECT and +/– on the TV to adjust the picture and sound settings.

Selecting the surround mode

1 Press SELECT repeatedly until "SURROUND" appears.

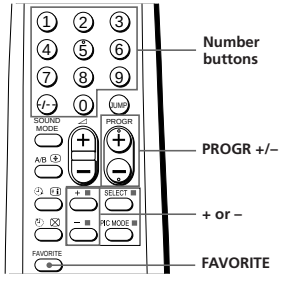
2 Press + or – to select the desired surround sound.



Select	To
MOVIE	listen to sound that spreads out over a large area, giving the feeling of being at a movie theatre.
MUSIC	listen to the sound that gives the feeling of being at a live concert.
OFF	turn off the surround sound.

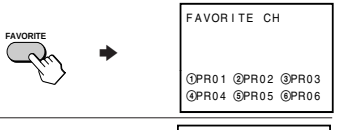
Viewing your favorite channels

You can display six of your favorite channels for quick and easy selection. You can change the favorite channel setting as well.



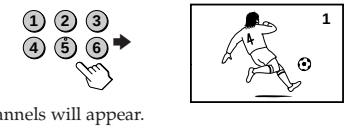
Selecting a favorite channel

1 Press FAVORITE.



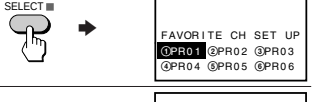
2 Press the number button from 1 to 6 to select the desired channel.

When you use the FAVORITE CH feature for the first time, six preset channels will appear.

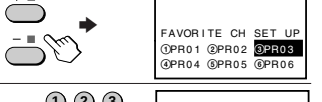


Changing the favorite channel setting

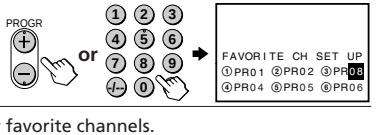
1 Press SELECT until "FAVORITE CH SET UP" appears.



2 Press + or – to select the favorite channel you want to change (e.g. ③ PR03).



3 Press PROGR +/–, or number buttons to change the program number.

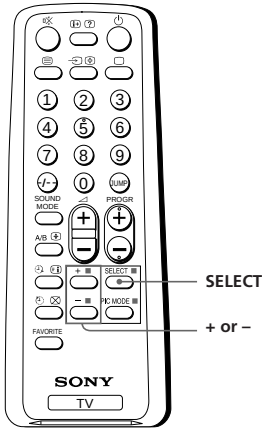


4 Repeat steps 2 and 3 to set other favorite channels.

5 Press SELECT.

Blocking the channels (CHILD LOCK)

You can prevent a child from watching certain programs by using the buttons on the remote control.



1 Select the TV program you want to lock.

2 Press SELECT until "CHILD LOCK" appears on the screen.

3 Press + or – to select "ON".

The 🔒 symbol appears on the screen.

To unlock the channel, press + or – to select "OFF". The 🔒 symbol disappears from the screen.

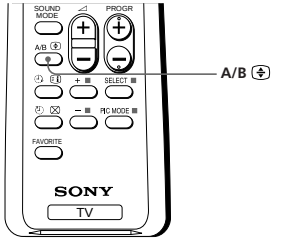
Note

- If you preset a locked channel, that particular channel will be unlocked automatically.

Selecting a stereo or bilingual program

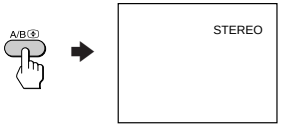
(Except KV-XF21M80)

You can enjoy stereo sound or bilingual programs of NICAM and A2 (German) stereo systems.



Press A/B repeatedly until you receive the sound you want.

The on-screen display changes to show the selected sound and the CD indicator on the TV lights up red.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

continued

MC-Service

Selecting a stereo or bilingual program (continued)

When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	MONO (Regular sound) → STEREO (Stereo sound)
A2 (German) bilingual	MAIN (Main sound) → SUB (Sub sound)

Receiving area for NICAM and A2 (German) programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, Malaysia, Thailand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO". The sound becomes monaural, but the noise is reduced.

If the sound is distorted or noisy when receiving a monaural program through the ⅂ (antenna) terminal

Press A/B ⏏ repeatedly until "MONO" appears on the screen.

To cancel the monaural sound setting, press A/B ⏏ again until "AUTO" appears on the screen.

MONO → AUTO

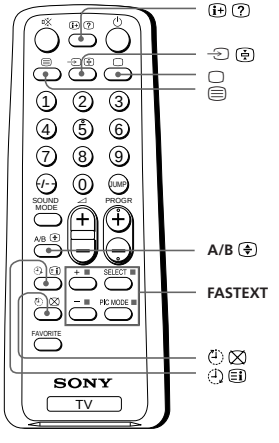
Notes

- The "MONO" or "AUTO" setting is memorized for each program position.
- You cannot receive stereo broadcast signal when the TV is in the "MONO" setting. Normally set the TV to "AUTO."

Viewing Teletext

(KV-XF21M61/XF21M65 only)

TV stations broadcast an information service called Teletext via some TV channels. Teletext allows you to receive various information, such as shares market or news.

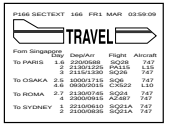


Displaying Teletext

1 Select a TV channel that carries the Teletext broadcast you want to watch.

2 Press ☰ to display the text.

A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, "100" is displayed at the top left corner of the screen.



To turn off Teletext

Press ▢.

continued

Viewing Teletext (continued)

Additional Teletext tasks

To	Do this
display a Teletext page on the TV picture	Press ☰. Each time you press ☰, the screen changes as follows: Teletext → Teletext and TV → TV.
check the contents of a Teletext service	Press ⏱ i. An overview of the Teletext contents and page numbers appear on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page.* If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/–.
hold a Teletext page (stop the page from scrolling)	Press ⇨ ⇳ to display the symbol "⇳" at the top left corner of the screen. To resume normal Teletext operation, press ⇨ ⇳ or ☰.
reveal concealed information (e.g., an answer to a quiz)	Press i ?. To conceal the information, press the button again.
enlarge the Teletext display	Press A/B ⇕. Each time you press A/B ⇕, the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
wait for a Teletext page while watching a TV program	1 Enter the Teletext page number that you want to refer to, then press ⏱ ⊗. 2 When the page number is displayed, press ☰ to show the text.

* You can also select a Teletext page of any page number that appears in the colored column at the bottom of the screen using the corresponding color-coded button on the remote.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, the colored menus appear at the bottom of the screen. The colors of the menus correspond to the red, green, yellow, and blue color-coded buttons on the remote.

To access a FASTEXT menu

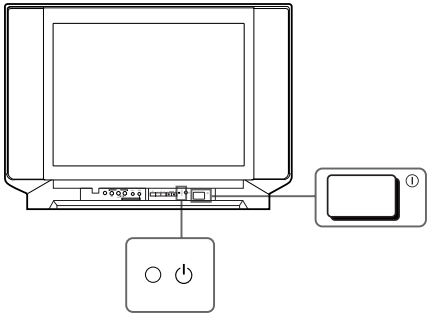
Press the color-coded button on the remote corresponding to the menu you want. The menu page appears on the screen after several seconds.

Additional Information

Self-diagnosis function

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the ⏻ indicator flashes red. The number of times the ⏻ indicator flashes indicates the possible causes.

Front of TV



1 Check that the red flashes of the ⏻ indicator are about 3 seconds per interval.

2 Count the number of times the ⏻ indicator flashes.

3 Press ⏻ (main power) to turn off your TV.

4 Inform your nearest Sony service center about the number of times the ⏻ indicator flashes.
Be sure to note the model name and serial number located on the rear of your TV.

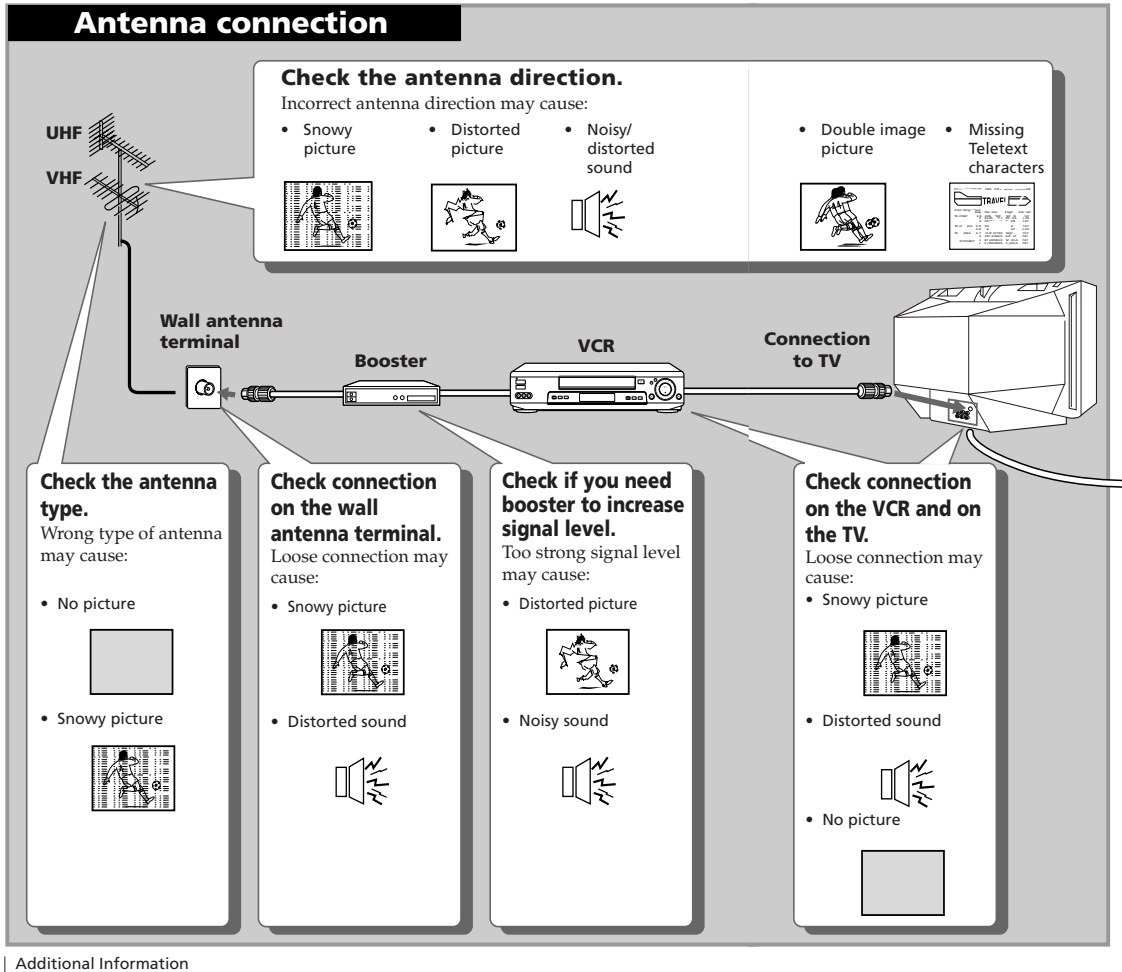
MC-Service

Troubleshooting Shortcuts

(KV-XF21M61/XF21M65 only)

For better viewing, please check the following connections.

Antenna connection



Check the antenna direction.

Incorrect antenna direction may cause:

- Snowy picture
- Distorted picture
- Noisy/ distorted sound
- Double image picture
- Missing Teletext characters

Check the antenna type.

Wrong type of antenna may cause:

- No picture
- Snowy picture

Check connection on the wall antenna terminal.

Loose connection may cause:

- Snowy picture
- Distorted sound

Check if you need booster to increase signal level.

Too strong signal level may cause:

- Distorted picture
- Noisy sound

Check connection on the VCR and on the TV.

Loose connection may cause:

- Snowy picture
- Distorted sound
- No picture

AC Connection

Check connection on the AC socket.

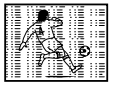
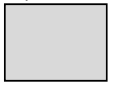
Loose connection may cause:

- no power
- no picture with no sound

For more information, please see "Troubleshooting" on page 26, 27 and 28. Or consult your dealer for guidance.

Troubleshooting

If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer .

Symptom	Solutions	Possible cause
Snowy picture  **Noisy sound** 	• Check the antenna cable and connection on the TV, VCR and on the wall. (page 4)	• Connection is loose or the cable is damaged.
	• Press SELECT until "MANUAL PROGRAM" appears on the screen then preset the channel again. (page 10)	• Channel presetting is inappropriate or incomplete.
	• Check the antenna type (VHF/UHF). Contact a Sony dealer for advice.	• The antenna type is inappropriate.
	• Adjust the antenna direction. Contact a Sony dealer for advice.	• The antenna direction is inappropriate.
	• Try using a booster.	• Signal transmission is low.
Distorted picture **Noisy sound** 	• Turn off or disconnect the booster if it is in use.	• Broadcast signals are too strong.
Good picture **Noisy sound** 	• If the sound of all the channels are noisy, then press AUTO PROGR to preset the channels again. (page 9)	• Channel presetting is inappropriate or incomplete.
	• If the sound of some channels are noisy, select the channel, then select the appropriate TV system. (page 10)	• The TV system setting is inappropriate.
No picture  **No sound** 	• Check the power cord, antenna and the VCR connections.	• The power cord, antenna or VCR is not connected.
	• Press ⏻ (power). • Press ⏀ (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	• The TV is not turned on.

Symptom	Solutions	Possible cause
Good picture **No sound** 	• Press ◿ + to increase the volume level.	• The volume level is too low.
	• Press 🔇 to cancel the muting.	• The sound is muted.
	• Press A/B ⏀ until a better sound is heard. (Except KV-XF21M80)	• Broadcast signal has a transmission problem.
Dotted lines or stripes 	• Do not use a hair dryer or other equipment near the TV. • Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice.	• There is local interference from cars, neon signs, hair dryers, power generators, etc.
Double images or "ghosts" 	• Use a highly directional antenna. • Use the fine tuning (FINE) function. (page 11)	• Broadcast signals are reflected by nearby mountains or buildings.
	• Adjust the antenna direction. Contact a Sony dealer for advice.	• The antenna direction is inapproprite.
	• Turn off or disconnect the booster if it is in use.	• Use of a booster is inappropriate.
No color 	• Press SELECT until "COLOR" appears on the screen, then press + or – to adjust the color level. (page 16)	• The color level setting is too low.
	• Press SELECT until "COL SYS " appears on the screen, then check the color system setting (usually set this to "AUTO"). (page 11).	• The color system setting is inappropriate.
	• Adjust the antenna direction. Contact a Sony dealer for advice.	• The antenna direction is inapproriate.
Abnormal color patches 	• Keep external speakers or other electrical equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏀ (main power) on the TV to turn off the TV for about five minutes, then turn it on again.	• There are magnetic effects from external speakers or other electrical equipment that may affect the TV. • The direction of the earth's magnetic field may affect the TV.
TV cannot receive stereo broadcast signal (Except KV-XF21M80)	• Press A/B ⏀ until "AUTO" appears on the screen	• The stereo reception setting is inappropriate.

continued

MC-Service

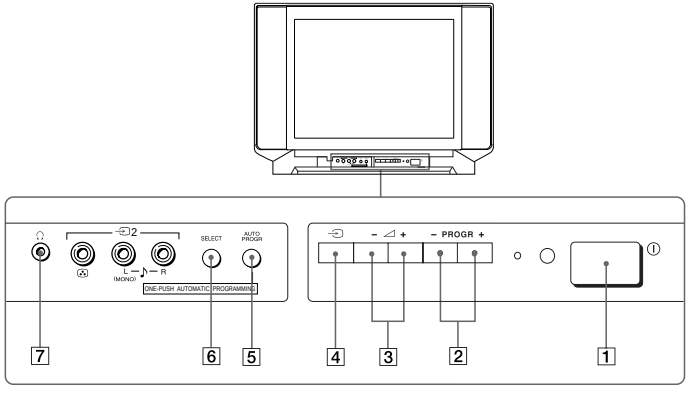
Troubleshooting (continued)

Symptom	Solutions	Possible cause
Stereo broadcast sound switches on and off or is distorted. **or** **The sound switches between monaural and stereo frequently. (Except KV-XF21M80)**	• Check the antenna cable and connection on the TV, VCR and on the wall. (page 4)	• Connection is loose or the cable is damaged.
	• Adjust the antenna direction. Contact a Sony dealer for advice.	• The antenna direction is inappropriate.
	• Press A/B ⇕ until a better sound is heard.	• Broadcast signal has a transmission problem.
"100" appears on the top of the screen and there is no Teletext display. (KV-XF21M61/XF21M65 only)	—	• The channel carries no Teletext broadcast.
Teletext display is incomplete (snowy picture or double images). (KV-XF21M61/XF21M65 only)	• Check the antenna cable and connection on the TV, VCR, and at the wall. (page 4)	• Connection is loose or the cable is damaged.
	• Adjust the antenna direction. Contact a Sony dealer for advice.	• The antenna direction is inappropriate.
	• Try using a booster. • Use the fine tuning (FINE) function. (page 11)	• Signal transmission is too low.
Lines moving across the TV screen.	• Use the fine tuning (FINE) function. (page 11)	• There is interference from external sources, e.g., heavy machineries, nearby broadcast station.
The ⏻ indicator on your TV flashes red once every 3 seconds.	• Contact your nearest Sony service center. (page 23)	• Your TV may need service.
TV cabinet creaks.	—	• Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.
A "boom" sound is heard when the TV is turned on.	—	• The TV's demagnetizing function is working. This does not indicate a malfunction.

Identifying parts and controls

Refer to the pages indicated in parentheses ( ) for details.

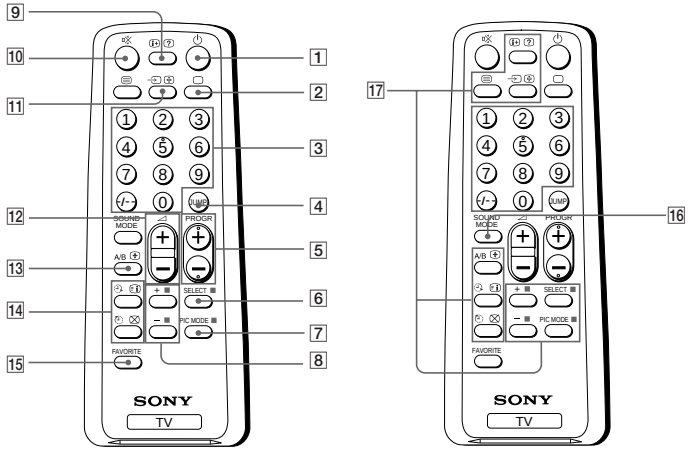
Front panel



1 ⏻ (main power) button (12)
2 PROGR +/– (program) buttons (12)
3 ◿ +/– (volume) buttons (12)
4 ⇕ (TV/video) button (13)
5 AUTO PROGR (program) button (5)
6 SELECT button (10)
7 🎧 (headphone) jack

continued

Remote Control



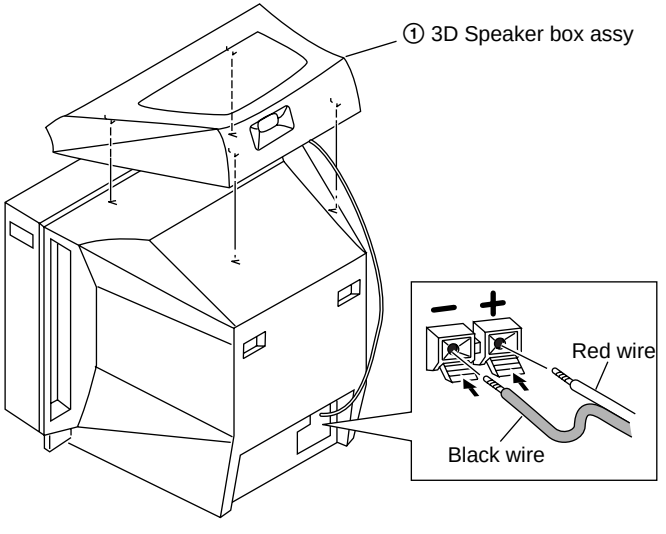
1 ⏻ (power) button (12)
2 ▭ (TV) button (13)
3 Number buttons (12)
4 JUMP button (13)
5 PROGR +/– buttons (12)
6 SELECT button (10)
7 PIC MODE button (15)
8 +/– buttons (10)
9 (display) button (13)
10 (muting) button (13)
11 (video) button (13)
12 +/– (volume) buttons (12)
13 A/B button
(Except KV-XF21M80)
14 Timer setting buttons (14)
(wake up timer)
(sleep timer)
15 FAVORITE button (17)
16 SOUND MODE button (15)
17 Teletext operation buttons
(KV-XF21M61/XF21M65 only)
(text) (enlarge)
(reveal) (hold)
(index) (text clear)
■ (FASTEXT: red, green, yellow, blue)

Names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

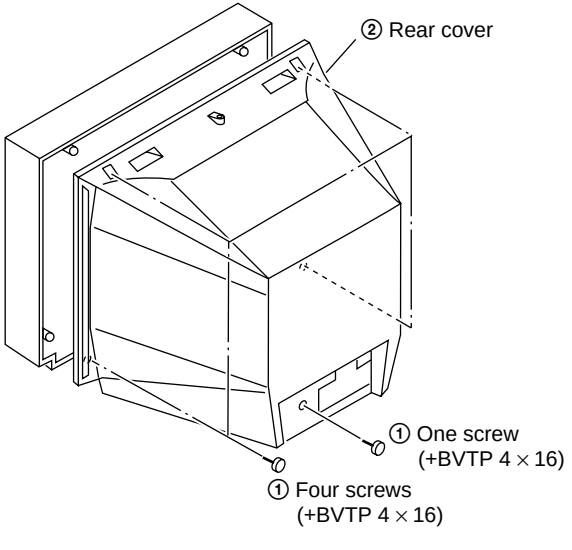
Label color	Button function
White	For general TV operations
Green	For Teletext operations

SECTION 2
DISASSEMBLY

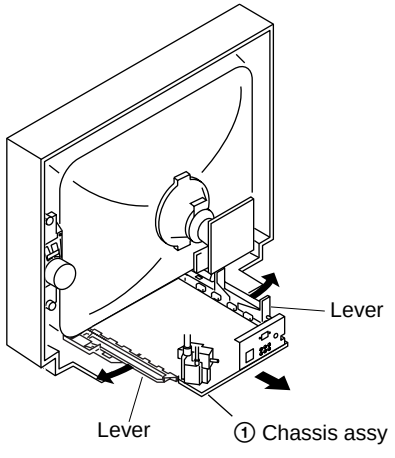
2-1. 3D SPEAKER BOX REMOVAL (KV-XF21M63/XF21M65 ONLY)



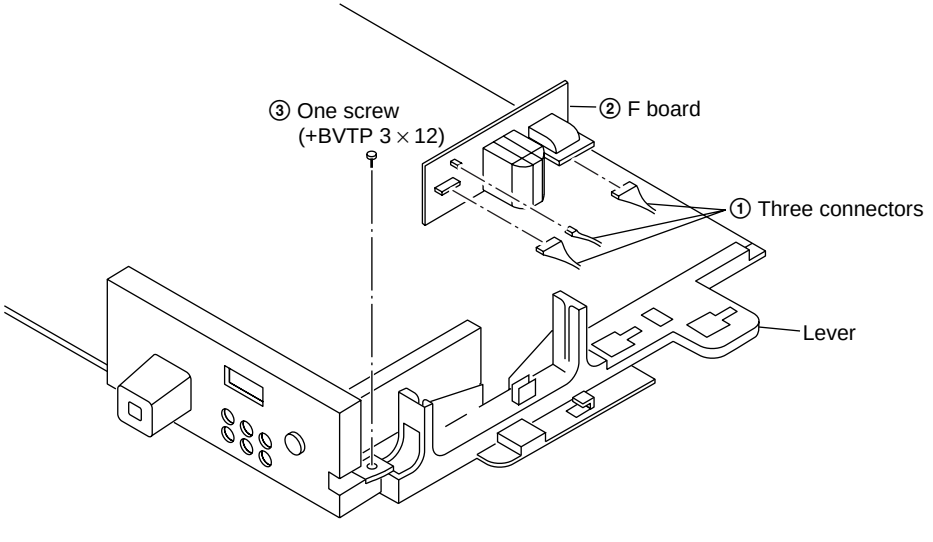
2-2. REAR COVER REMOVAL



2-3. CHASSIS ASSY REMOVAL

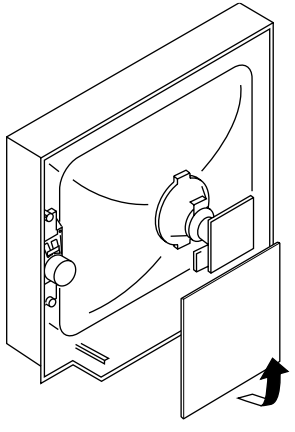


2-4. F BRACKET REMOVAL



2-5. SERVICE POSITION

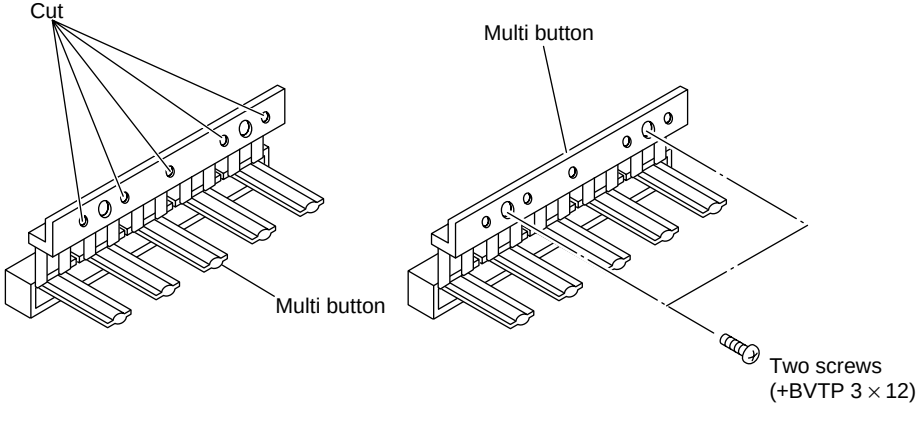
(Note: Remove F Bracket first.)



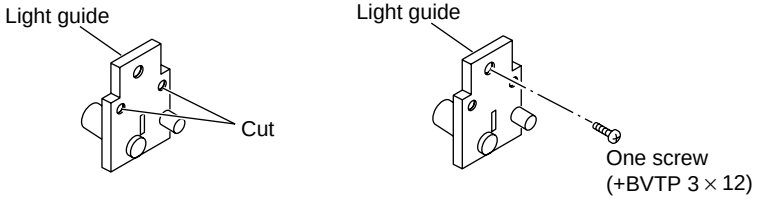
2-6. REPLACEMENT OF PARTS

For replacement of the Multi Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

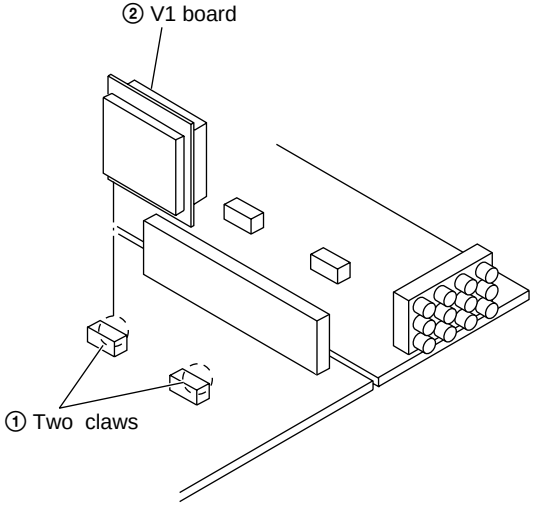
2-6-1. REPLACEMENT OF MULTI BUTTON



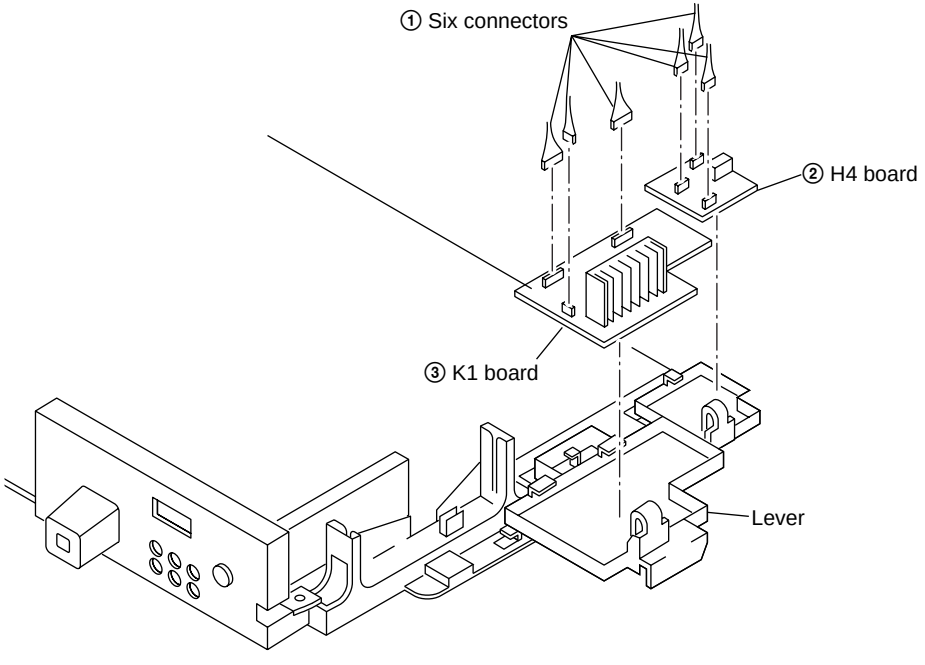
2-6-2. REPLACEMENT OF LIGHT GUIDE



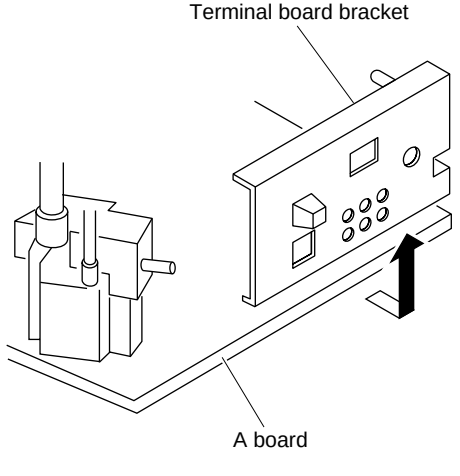
2-7. V1 BOARD REMOVAL (KV-XF21M61/XF21M65 only)



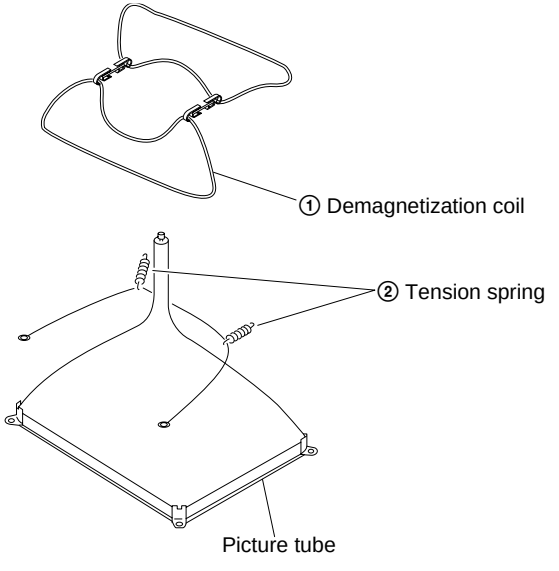
2-8. H4 AND K1 BOARD REMOVAL (KV-XF21M63/XF21M65 only)



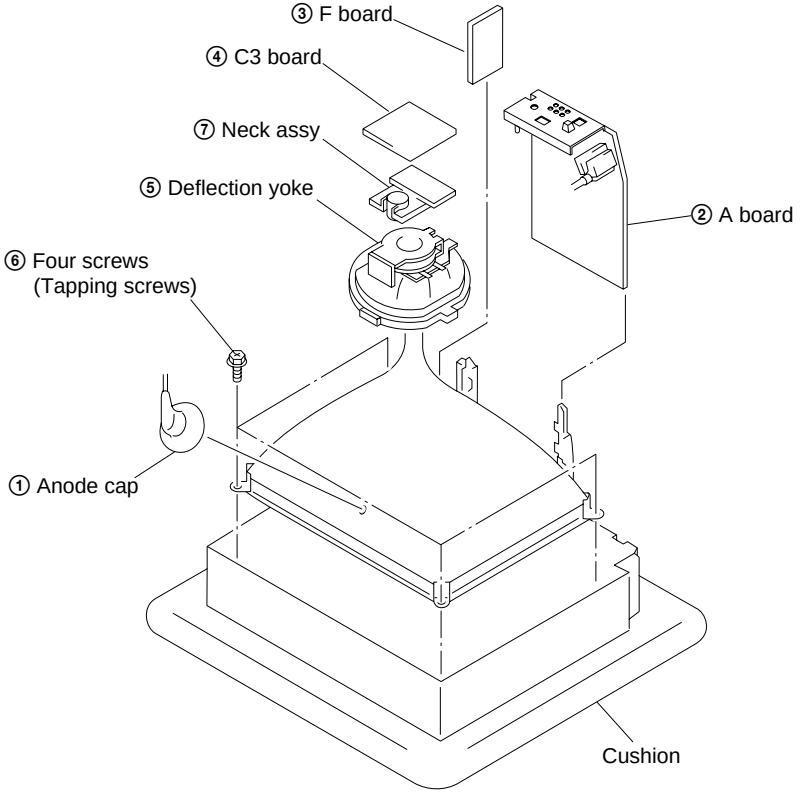
2-9. TERMINAL BRACKET REMOVAL



2-10. DEGAUSS COIL REMOVAL



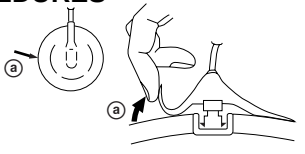
2-11. PICTURE TUBE REMOVAL



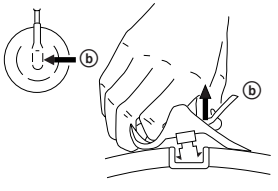
• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

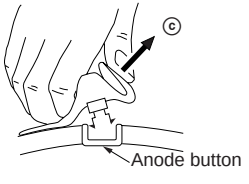
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



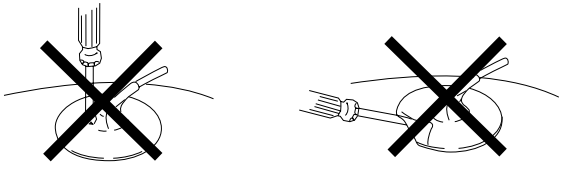
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Do not damage the surface of anode-caps with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast } normal
   Brightness }
2. Position neck assy as shown in Fig3-2.
3. Set the pattern generator raster signal to a green raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
6. Switch the raster signal to blue, then to red and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

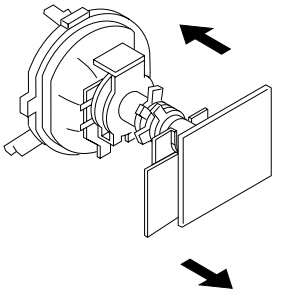
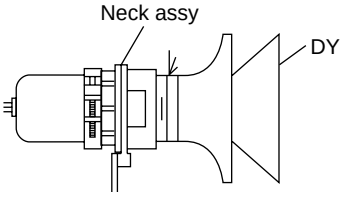


Fig. 3-1



Note:
Neck Assy is exactly behind DY (no gap between Neck Assy and DY)

Fig. 3-2

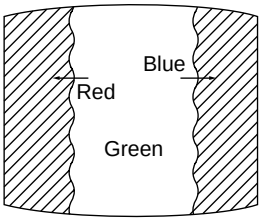


Fig. 3-3

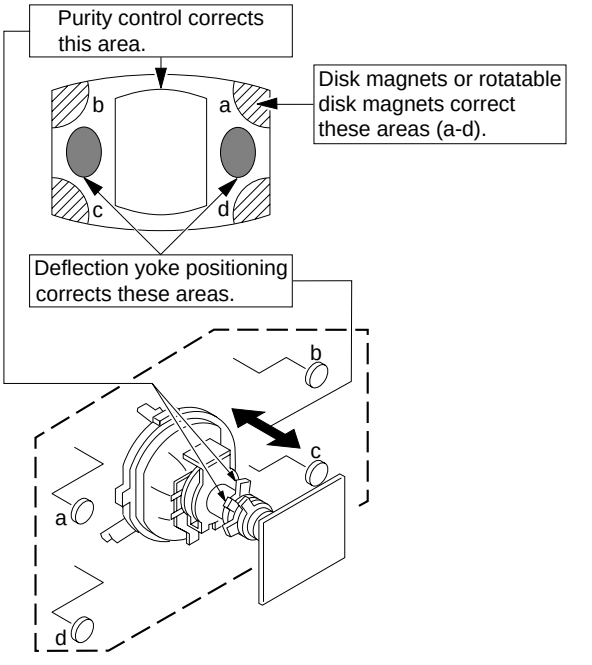


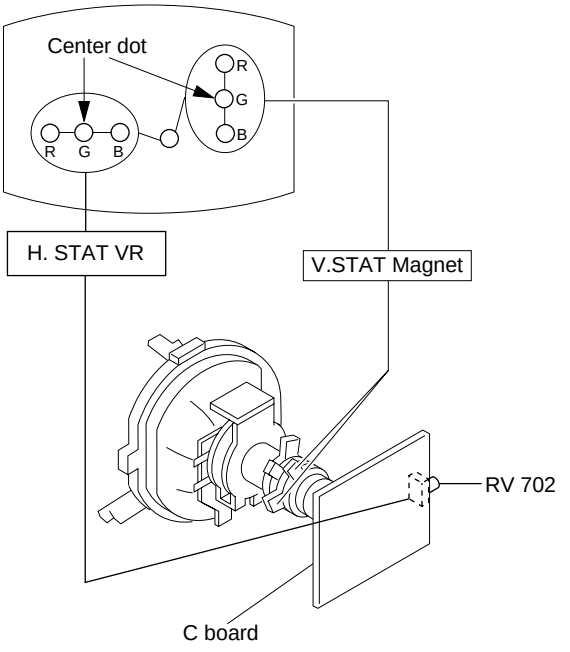
Fig. 3-4

3-2. CONVERGENCE

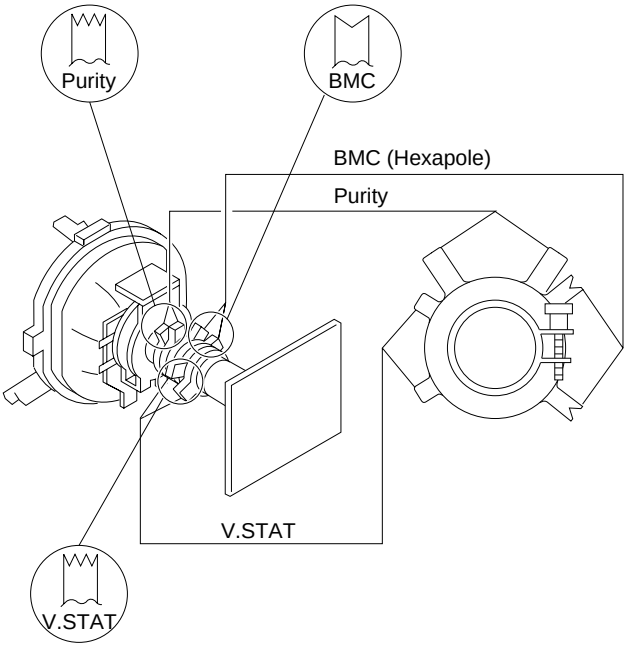
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

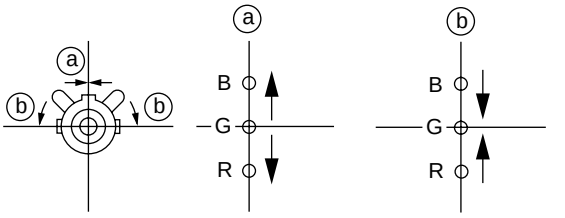
(1) Horizontal and Vertical Static Convergence



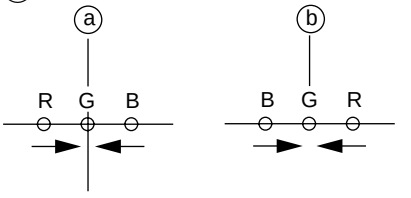
(Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.



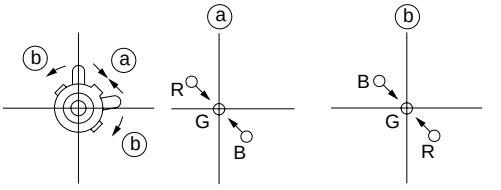
① V. STAT



② H. STAT VR

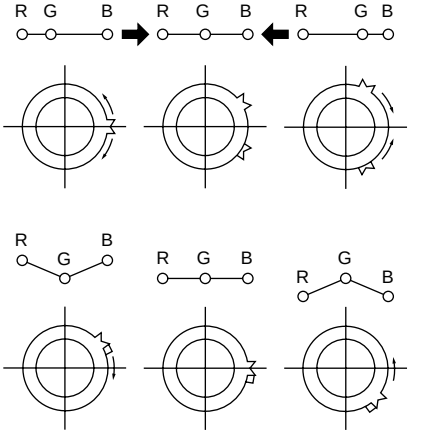


③



④ BMC (Hexapole) Magnet.

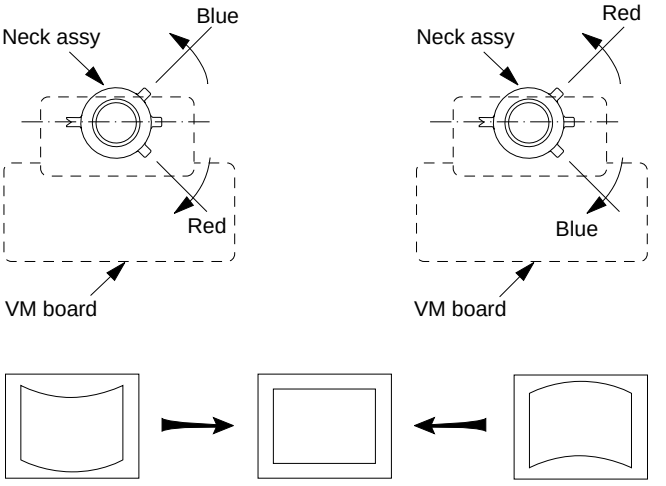
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



④ Y separation axis correction magnet adjustment.

1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .

2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.



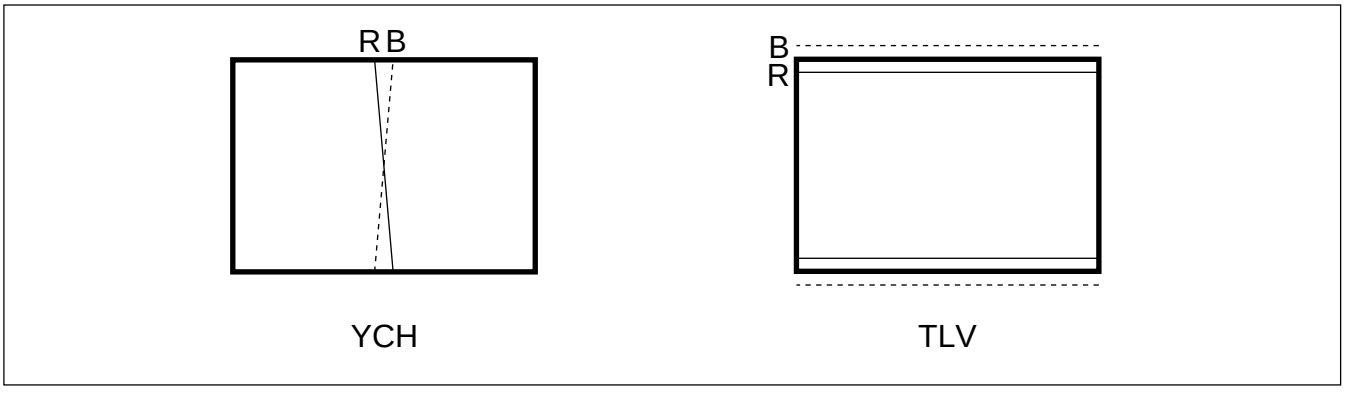
Note

1. The Red and Blue magnets should be equally far from the horizontal center line.
2. Do not separate the Red and Blue magnets too far. (Less than 8 mm)

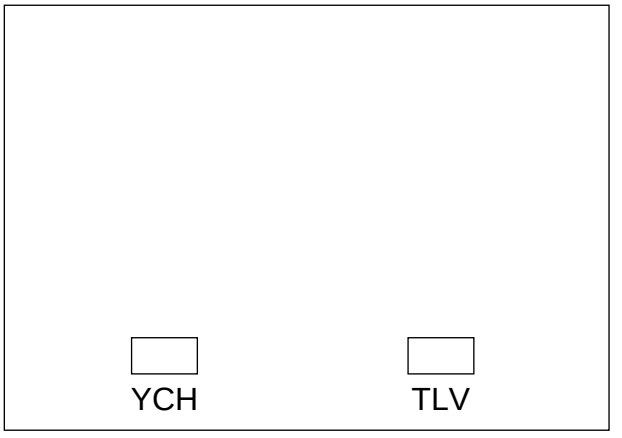
(2) Dynamic Convergence Adjustment

Preparation:

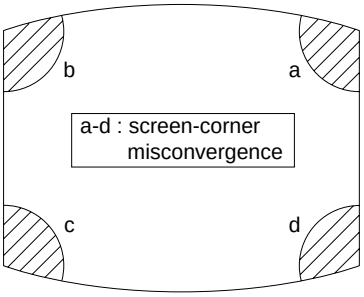
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence



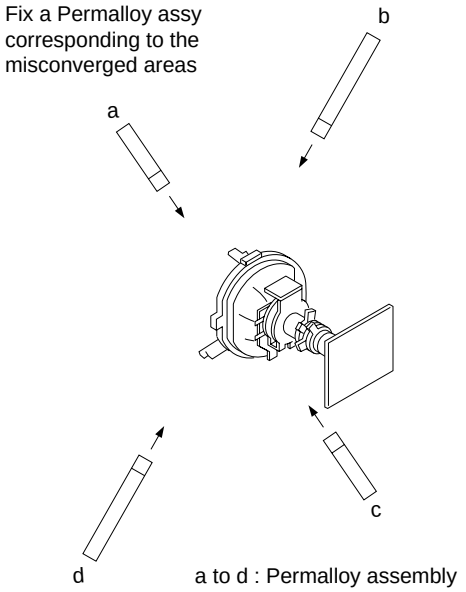
on DY



(3) Screen-corner Convergence

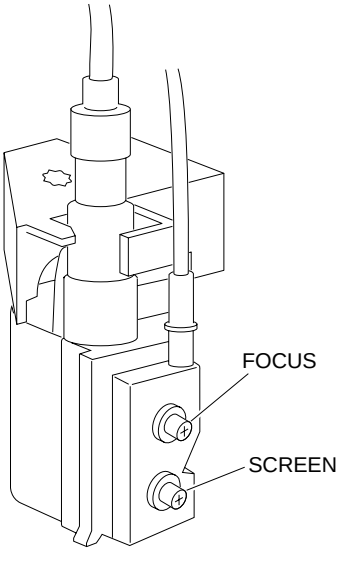


Fix a Permalloy assy corresponding to the misconverged areas.



3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.

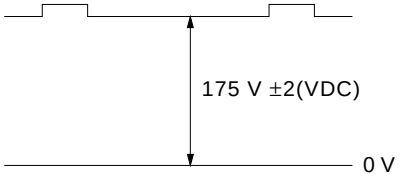


FLYBACK TRANSFORMER (T503)

3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C board cathode to the oscilloscope.
4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
5) Adjust G2 (Screen) on FBT until picture shows the point before cut-off.

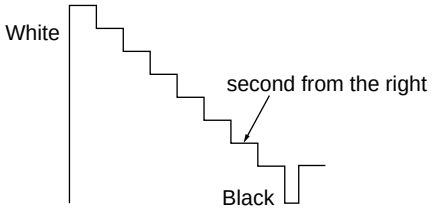


2. WHITE BALANCE ADJUSTMENT

1) Set to Service Mode (Refer Section 5-1: ADJUSTMENTS WITH COMMANDER).
2) Input white raster signal.
3) Set the PICTURE to minimum.
4) Select GCT (WHB 4) and BCT (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5) Set the PICTURE to maximum.
6) Select GDR (WHB 1) and BDR (WHB 2) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
7) Write into the memory by pressing [MUTING] then [0].

3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black to white from the pattern generator.
3) BRIGHTNESS .... 50%.
   PICTURE ..... MINIMUM
4) Select SBR (WHB7) with [1] and [4], and adjust SBR (WHB7) level with [3] and [6] so that the second stripe from the right is dimly lit.



SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-952 that comes with this unit.

a. ENTERING SERVICE MODE

With the unit on standby
↓
[DISPLAY]
↓
[5]
↓
[VOL (+)]
↓
[POWER]

This operation sequence puts the unit into service mode.

b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

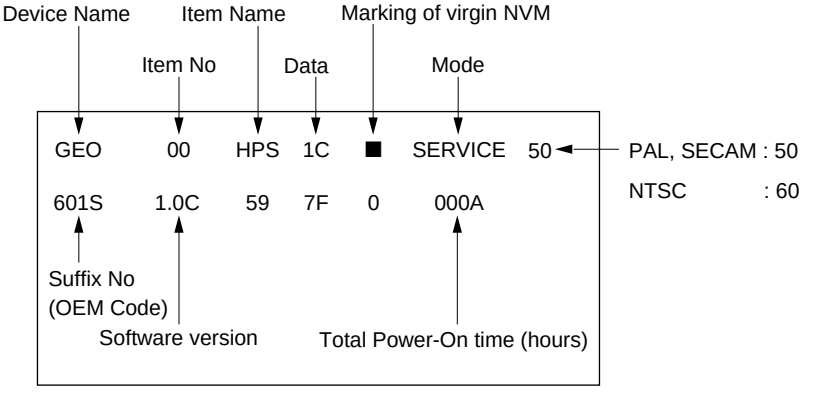
c. METHOD OF WRITE INTO MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), select an item of adjustment.
3) Press [MUTING] button and it will indicate WRITE on the screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

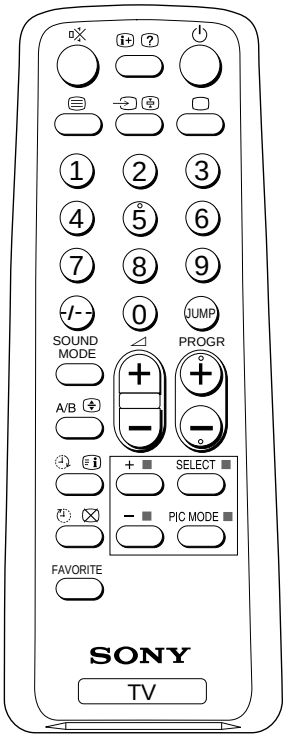
1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

The screen display is :



[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

[7], [0]	All the data becomes the values in memory.
[8], [0]	All user control goes to the standard state.
[5], [0]	Service data initialization (Be sure not to use usually.)
[2], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.



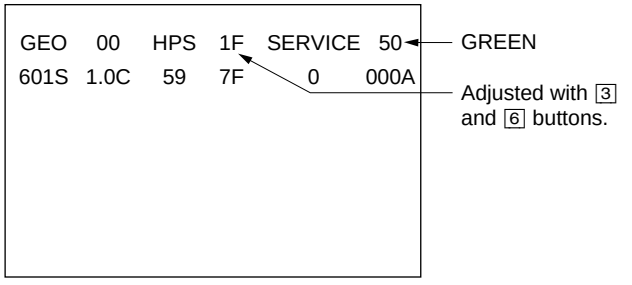
RM-952

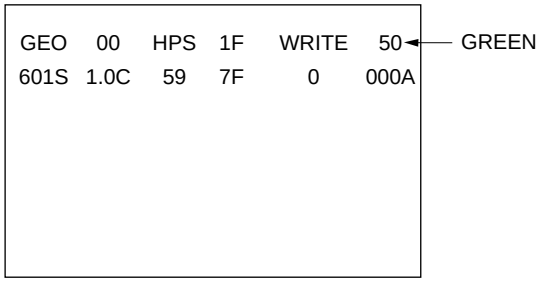
4-2. ADJUSTMENT METHOD

Item Number 00 of device GEO

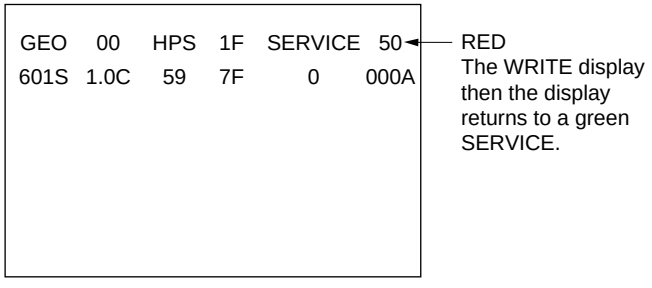
This explanation uses H-Position as an example.

1. Select “GEO 00 HPS” with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)





Written with [MUTING]



Write executed with [0]

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Note : 1. In [WRITE], the data for all items are written into memory together.

2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

Adjustment Item Table

Device Name	Functionality No	Functionality Name	Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)
GEO	0	HPS	7	3F	H Position	50/60HZ	12 (7-2)	CXA2130S(88H)	82 (7-2)
	1	HSZ	1F	3F	H Size	50/60HZ	11 (7-2)		81 (7-2)
	2	PAP	1F	3F	Pin Amp	50/60HZ	13 (7-2)		83 (7-2)
	3	TLT	7	0F	Trapezium	50/60HZ	15 (7-4)		86 (7-4)
	4	VPS	1F	3F	V Position	50/60HZ	0F (7-2)		7F (7-2)
	5	VSZ	1F	3F	V Size	50/60HZ	0E (7-2)		7E (7-2)
	6	SCO	7	0F	S Correction	50/60HZ	10 (7-4)		80 (7-4)
	7	VLN	7	0F	V Linearity	50/60HZ	10 (3-0)		80 (3-0)
	8	BOW	7	0F	AFC Bow	50/60HZ	16 (7-4)		86 (7-4)
	9	AGL	7	0F	AFC-Angle	50/60HZ	16 (3-0)		86 (3-0)
	0A	UPN	1F	3F	Upper Pin	50/60HZ	14 (7-2)		84 (7-2)
	0B	LPN	2F	3F	Lower Pin	50/60HZ	18 (7-2)		88 (7-2)
	0C	HBL	1	1	H Blanking on/off		18 (1)		67 (1)
	0D	LBL	7	0F	Left H Blanking	50/60HZ	17 (7-4)		87 (7-4)
	0E	RBL	7	0F	Right H Blanking	50/60HZ	17 (3-0)		87 (3-0)
WHB	0	RDR	1F	3F	R Drive	DYNAMIC/others	09 (7-2)	CXA2130S(88H)	8F (7-2)
	1	GDR	1F	3F	G Drive	DYNAMIC/others	0A (7-2)		90 (7-2)
	2	BDR	1F	3F	B Drive	DYNAMIC/others	0B (7-2)		91 (7-2)
	3	RCT	7	0F	R Cutoff	SECAM/others	07 (3-0)		93 (3-0)
	4	GCT	7	0F	G Cutoff	SECAM/others	08 (7-4)		94 (7-4)
	5	BCT	7	0F	B Cutoff	SECAM/others	08 (3-0)		94 (3-0)
	6	BMN	15	1F	Brightness Minimum Data				95
	7	SBR	28	3F	Sub Brightness Control				98
SAJ	0	PMX	33	3F	Picture Maximum Data			CXA2130S(88H)	95
	1	SHU	8	0F	Sub Hue Control	TV/Video			99
	2	SSH	3	0F	Sub Sharpness Control	TV/Video			9A
	3	SCL	1F	3F	Sub Color Control	NTSC/others			9B
VP	0	EHT	4	0F	EHT Comp	50/60HZ	15 (3-0)	CXA2130S(88H)	85 (3-0)
	1	GMA	2	03	Gamma Correction	NTSC/others	0B (1-0)		1A1 (1-0)
	2	YDL	6	0F	Y Delay	PAL/SECAM/NTSC	0C (3-0)		8C (3-0)
	3	SST	2	03	SECAM ID Start Position		1B (1-0)		6A (1-0)
	4	SSP	1	03	SECAM ID Stop Position		1B (3-2)		6A (3-2)
	5	SLV	2	03	SECAM ID Level		1C (1-0)		6B (1-0)
	6	SBF	22	3F	SECAM BELL fO		1C (7-2)		6B (7-2)
	7	DYC	1	1	Dynamic Color on/off		0A (1)		59 (1)
	8	ABL	1	1	ABL Mode Switching (except STANDARD)		09 (1)		58 (1)
	9	VTH	1	1	ABL Detection Vth Switching		09 (0)		58 (0)
	0A	SFO	1	1	FO Switching for Sharpness	NTSC/others	05 (1)		196 (1)
	0B	DCX	1	1	DC Trans. Ratio Switching		06 (1)		55 (1)
	0C	SHT	1	1	Pre-/Overshoot ratio Switch	NTSC/others	06 (0)		197 (0)

Adjustment Item Table

Device Name	Functionality No	Functionality Name	Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)
VP	0D	HDW	0	1	H Drive Pulse Width Switch		00 (6)		4F (6)
	0E	AFC	1	03	AFC Gain Control	TV/Video	0F (1-0)		8D (1-0)
	0F	HOS	7	0F	H Oscillation		0C (7-4)		5B (7-4)
	10	HSS	0	1	Slice Level of H Sync Sep.		0D (1)		5C (1)
	11	VSS	0	1	Slice Level of V Sync Sep.		0D (0)		6C (0)
	12	HMS	1	1	Macro Vision C/m off/on	50/60Hz	0E (0)		7E (0)
	13	YUV	0	1	YUV Switch Control		01 (0)		50 (0)
	14	CDV	1	3	CD mode for Video	Video only	0D (5-4)		19F (5-4)
	15	RON	1	1	R ON	not memorized	01 (3)		50 (3)
	16	GON	1	1	G ON	not memorized	01 (2)		50 (2)
	17	BON	1	1	B ON	not memorized	01 (1)		50 (1)
	18	PON	1	1	P ON	not memorized	00 (7)		4F (7)
	19	BLK	0	1	BLK Off		12 (0)		61 (0)
	1A	VMC	0	1	VM Off		13 (0)		62 (0)
AP	0	INF	0	3F	Input Attenuation When surround on		00 (5-0)	TDA7429	19D (5-0)
	1	INS	0	3F	Input Attenuation When surround off				19E (5-0)
	2	PH1	0	3	Phase 1 Register Selection		02		76 (1-0)
	3	PH2	0	3	Phase 2 Register Selection				76 (3-2)
	4	PH3	0	3	Phase 3 Register Selection				76 (5-4)
	5	PH4	0	3	Phase 4 Register Selection				76 (7-6)
	6	BCS	2	3	Bass Center Shift		#4 (3-0)		1A8 (1-0)
	7	TCS	2	3	Treble Center Shift		#5 (3-0)		1A9 (1-0)
	8	TRF	2	3	RF Treble Offset		#5 (3-0)		1A9 (5-4)
MSP	0	WST	15	FF	W/G Stereo Threshold			MSP3415D(84H)	157 (7-0)
	1	WBT	EA	FF	W/G Bilingual Threshold				158 (7-0)
	2	WLL	5	FF	W/G Monaural Threshold				159 (7-0)
	3	WAC	0	0F	W/G Agreement Count				15A (3-0)
	4	WDL	30	FF	W/G Search Delay				15B (7-0)
	5	NDL	20	FF	NICAM Search Delay				15C (7-0)
	6	SDL	10	FF	Stereo status Read Delay				15D (7-0)
	7	AGC	1	1	AGC Switch Auto/Constant		BB (7)		108 (7)
	8	REL	28	3F	AGC Gain at Constant Mode		BB (6-1)		108 (6-1)
	9	CRM	0	1	Carrier muting on/off		BB (9)		107 (9)
	0A	ACO	1	1	Audio Clock out on/off		83 (5)		10C (5)
	0B	FP	1B	7F	FM Prescale for non-M system		0E (7-0)		16C (6-0)
	0C	FPM	32	7F	FM Prescale for M system		0E (7-0)		16D (6-0)
	0D	FH	36	7F	FM Prescale for HDEV		0E (7-0)		16E (6-0)
	0E	FHM	65	7F	FM Prescale for HDEV and M		0E (7-0)		16F (6-0)
	0F	WGP	2A	7F	W/G Prescale		0E (7-0)		170 (6-0)
	10	NIP	6D	7F	NICAM Prescale		10 (7-0)		138 (6-0)
	11	ERR	50	FF	Auto FM switch Threshold		21 (10-3)		166 (7-0)
	12	VOL	6D	FF	Loud Speaker gain 7000h to 7ffoh		0000 (15-4)		1A7 (7-0)

Adjustment Item Table

Device Name	Functionality No	Functionality Name	Note	Data Range	Function	Note for Different Data	Register No. (bit)	Slava Address	RAM Address (bit)
TXT	0	TXH	1	3	Teletext Horizontal Position			(58H)	18D (6-4)
	1	TXV	0	7	Teletext Vertical Position				18D (1-0)
OPM	0	OSH	0A	3F	OSD H Position	Option-Misc			AC (7-2)
	1	COM	0	03	Comb Selection				A5 (7-6)
	2	APC	1	1	APC Switch				A4 (5)
	3	TSY	0	03	TV Sys at Auto TV Sys				A4 (4-3)
	4	MUT	0	1	No Signal Mute				A4 (0)
	5	AFM	1	1	Auto FM switch				A4 (1)
	6	RFB	0	3	C-BPF Control				A4 (5-4)
	7	DBL	0	1	Disable Blueback Function				A4 (2)
OPB	0	OP1	FF	FF	Optional Bits 1 (see below)	Option-Bits			45
	1	OP2	E3	FF	Optional Bits 2 (see below)				46
	2	OP3	0	FF	Optional Bits 3 (see below)				47

NOTE

- shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory.
  In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

ITEM INFORMATION.

No. OPB0 OP1

Item	XTAL 4.43	XTAL 3.58	SECAM	2nd. Lang	B/G	I	D/K	M
KV-XF21M61	1	1	1	1	1	1	1	1
KV-XF21M63	1	1	1	1	1	1	1	1
KV-XF21M65	1	1	1	1	1	1	1	1
KV-XF21M80	1	1	1	1	1	1	1	1
KV-XF21M90	1	1	1	1	1	1	1	1

No. OPB1 OP2

Item	TOP	NICAM	HDEV	Thai Bil	–	DVD Input	AV Input	
KV-XF21M61	1	1	1	0	0	0	1	1
KV-XF21M63	1	1	1	1	0	0	1	1
KV-XF21M65	1	1	1	0	0	0	1	1
KV-XF21M80	0	1	1	0	0	0	1	1
KV-XF21M90	0	1	1	0	0	0	1	1

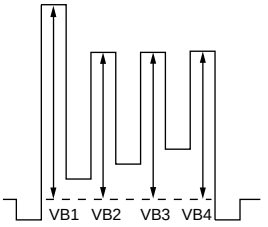
No. OPB2 OP3

Item	–	–	Auto PIC	Auto TV sys	US ST	Arabic	11 KEY	Chinese
KV-XF21M61	0	0	0	1	0	1	0	1
KV-XF21M63	0	0	1	1	0	0	0	0
KV-XF21M65	0	0	1	1	0	0	0	1
KV-XF21M80	0	0	0	1	0	0	0	0
KV-XF21M90	0	0	0	1	0	0	0	1

4-3. PICTURE QUALITY ADJUSTMENTS

SUB COLOR ADJUSTMENT

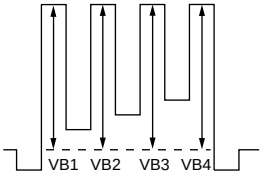
1. Input a PAL color-bar.
2. Set to the following condition:
   PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
3. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
4. Set to Service Mode and select SAJ 3 'SCL' with [1] and [4] of the commander then adjust to VB2=VB3=VB4 with [3] and [6].
5. Press [MUTING] → [0] of the commander to write the data.
6. Adjust SAJ 3 'SCL' as step 2 to 5 when receiving NTSC color-bar.



VB2 = VB3 = VB4

SUB HUE ADJUSTMENT

1. Select Video 1.
2. Input a NTSC color-bar, video into Video 1.
3. Set the following condition:
   PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Select SAJ 1 'SHU' with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].

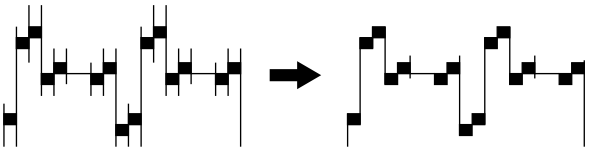


VB1 = VB2 = VB3 = VB4

6. Press [MUTING] → [0] of the commander to write the data.

BELL FILTER ADJUSTMENT

1. Input SECAM color-bar signal.
2. Connect the dual-trace oscilloscope to the pin ⑨ (R-Y) of CN303 (not mounted).
3. Adjust SERVICE MODE, ITEMS 'SBF' as shown below.



4-4. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

When replacing IC003 (MEMORY), be sure to change IC001 (μ-COM) to the following new IC at the same time.
IC001(μ-CON):CXP86449-611S (Except KV-XF21M63)
: CXP86449-612S (KV-XF21M63)

1. Enter to Service Mode.

2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.

3. Call each item number and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the items with fine adjustment.
   Write the data per each item number ([MUTING] +[0]).

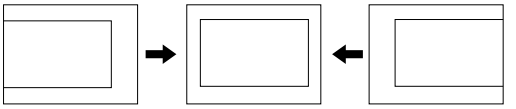
4. Select item numbers "OPB0" (OP1), "OPB1" (OP2) and "OPB2" (OP3) and respectively set the bit per model with command buttons [3] and [6].

5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
   (This will also cancel Service Mode.)

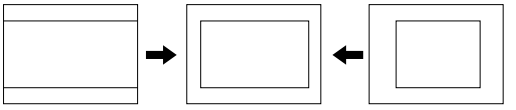
4-5. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 0B

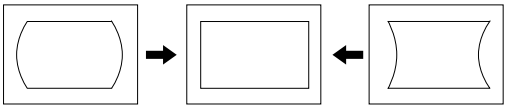
GEO 0 HSH (H POSITION)



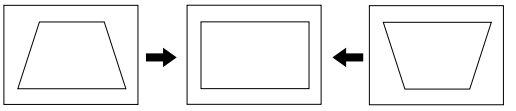
GEO 1 HSZ (H SIZE)



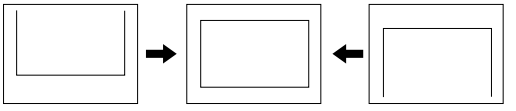
GEO 2 PAP (PIN AMP)



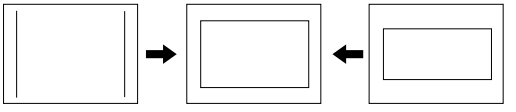
GEO 3 TILT (TRAPEZIUM)



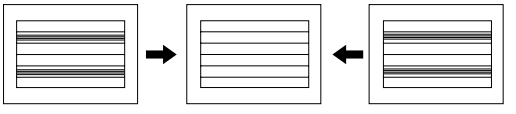
GEO 4 VSH (V POSITION)



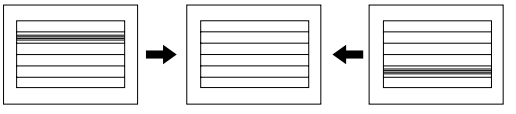
GEO 5 VSZ (V SIZE)



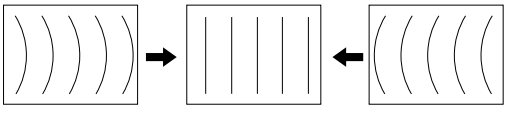
GEO 6 SCR (VERTICAL S-Correction)



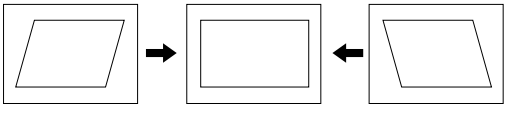
GEO 7 VLN (V LINEARITY)



GEO 8 VBOW (AFC.BOW)

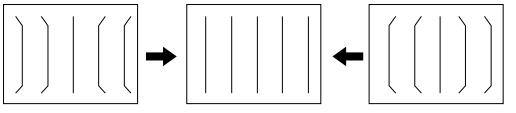


GEO 9 AGL (AFC.ANGLE)



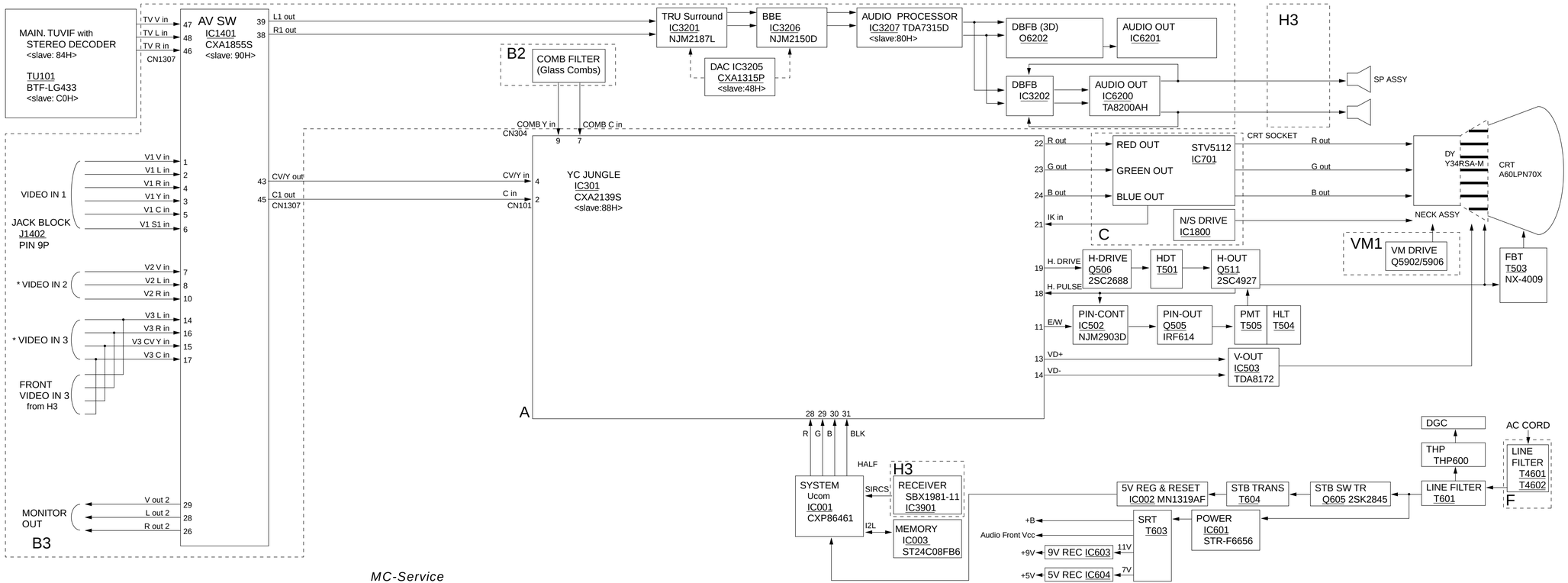
GEO 0A UCP (UPPER CORNER PIN)

GEO 0B LCP (LOWER CORNER PIN)



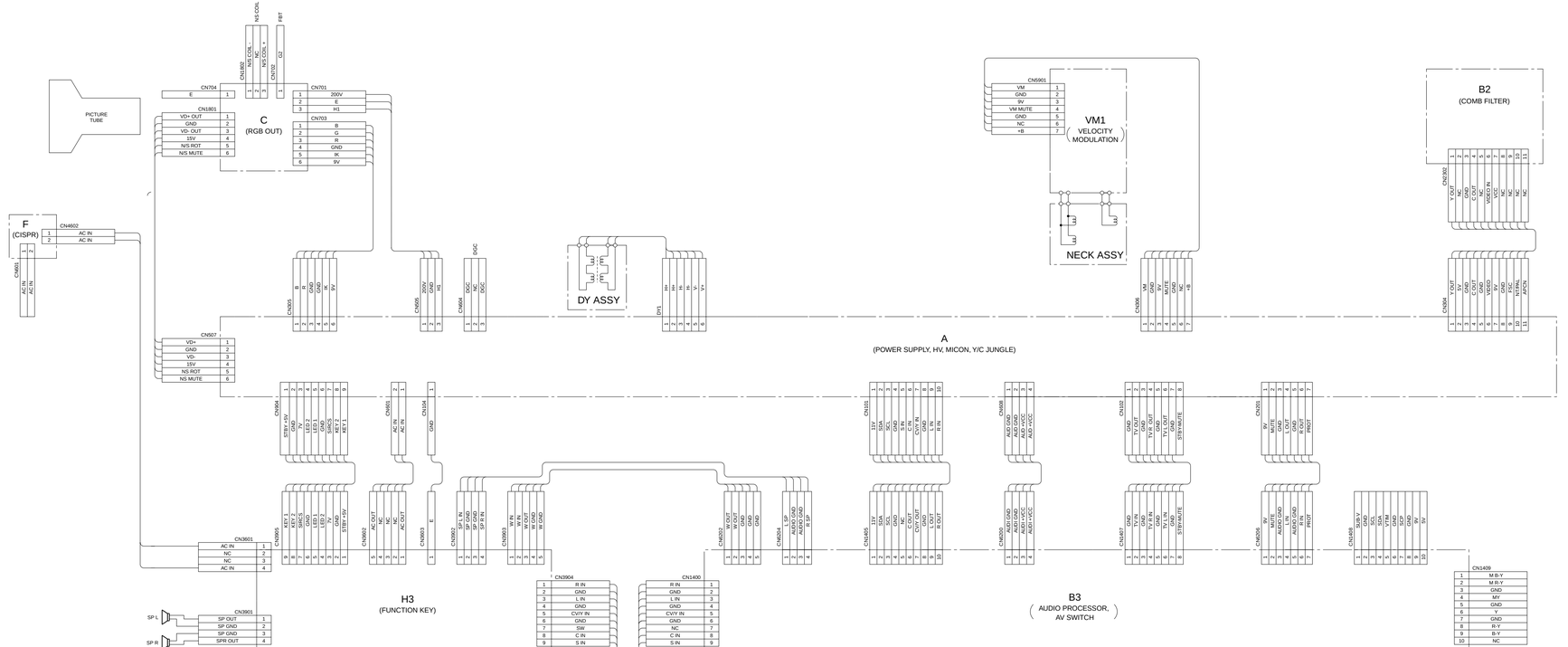
SECTION 5
DIAGRAM

5-1. BLOCK DIAGRAM

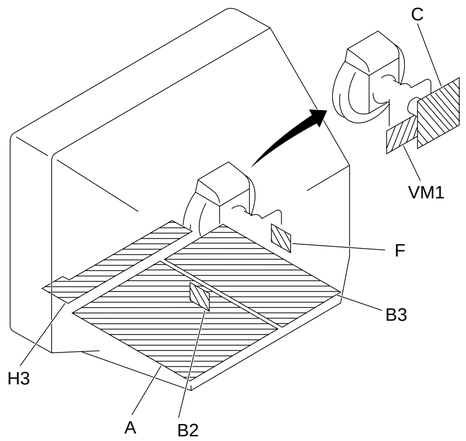


MC-Service

5-2. FRAME SCHEMATIC DIAGRAM



5-3. CIRCUIT BOARDS LOCATION



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

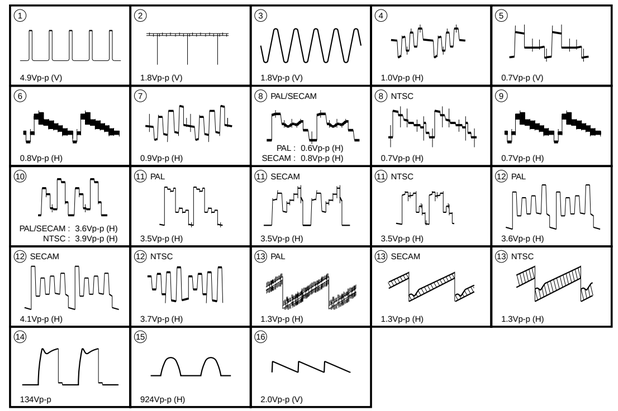
- : nonflammable resistor.
- △ : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
  no mark : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  « » : NTSC 4.43
- **Readings are taken with a 10 MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltages are in V.**
- *** :Cannot be measured.**
- **Circled numbers are waveform references.**
- **:B + bus.**
- **:B – bus.**
- ⇨ **:signal path.**

Reference information

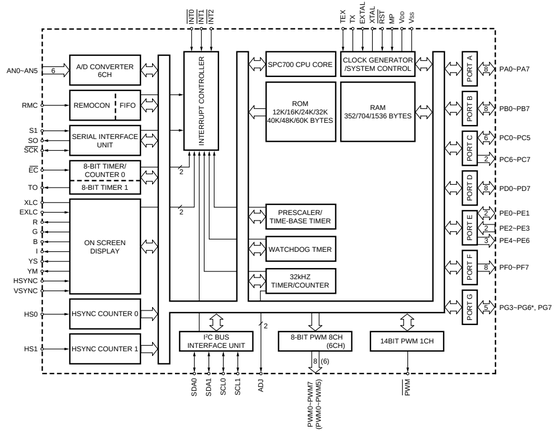
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

A BOARD WAVEFORMS

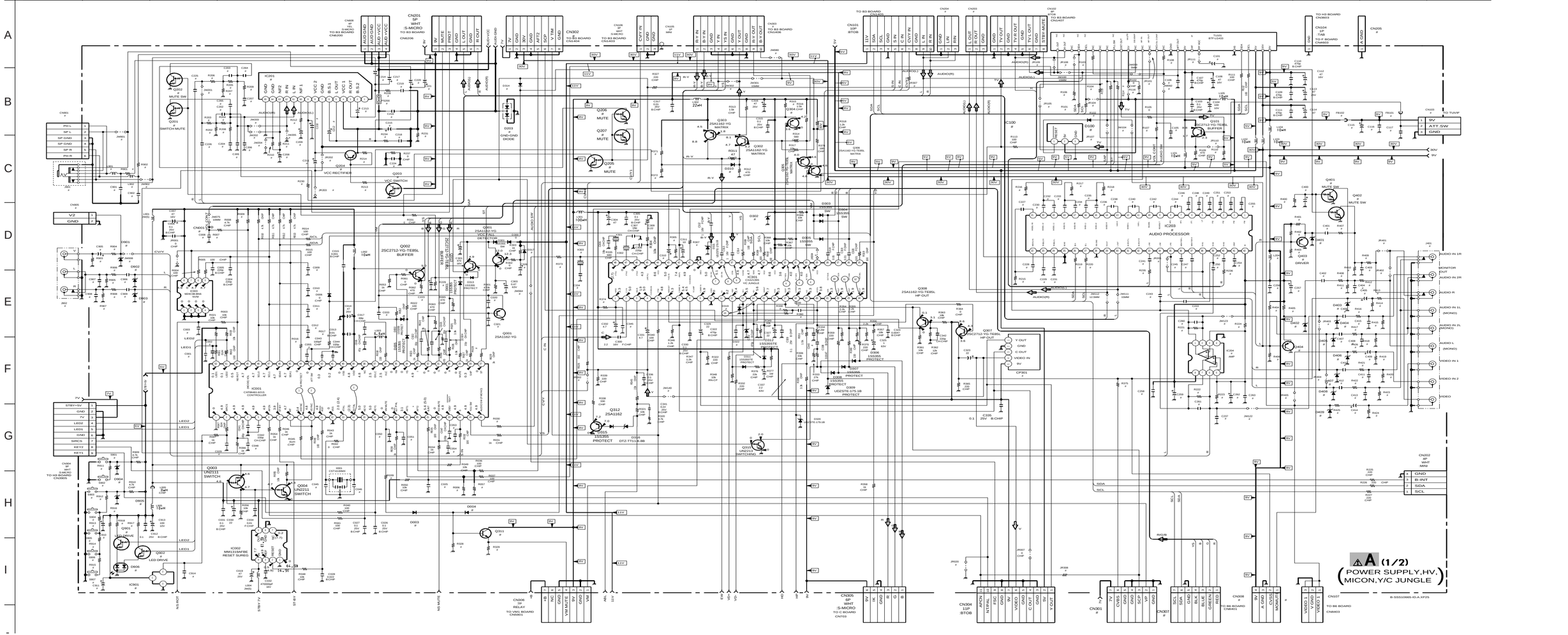

① 4.9Vp-p (V)
② 1.8Vp-p (V)
③ 1.8Vp-p (V)
④ 1.0Vp-p (H)
⑤ 0.7Vp-p (V)
⑥ 0.8Vp-p (H)
⑦ 0.9Vp-p (H)
⑧ PAL/SECAM PAL : 0.6Vp-p (H) SECAM : 0.8Vp-p (H)
⑧ NTSC 0.7Vp-p (H)
⑨ 0.7Vp-p (H)
⑩ PAL/SECAM : 3.6Vp-p (H) NTSC : 3.9Vp-p (H)
⑪ PAL 3.5Vp-p (H)
⑪ SECAM 3.5Vp-p (H)
⑪ NTSC 3.5Vp-p (H)
⑫ PAL 3.6Vp-p (H)
⑫ SECAM 4.1Vp-p (H)
⑫ NTSC 3.7Vp-p (H)
⑬ PAL 1.3Vp-p (H)
⑬ SECAM 1.3Vp-p (H)
⑬ NTSC 1.3Vp-p (H)
⑭ 134Vp-p
⑮ 924Vp-p (H)
⑯ 2.0Vp-p (V)

A BOARD IC001 CXP86461-621S

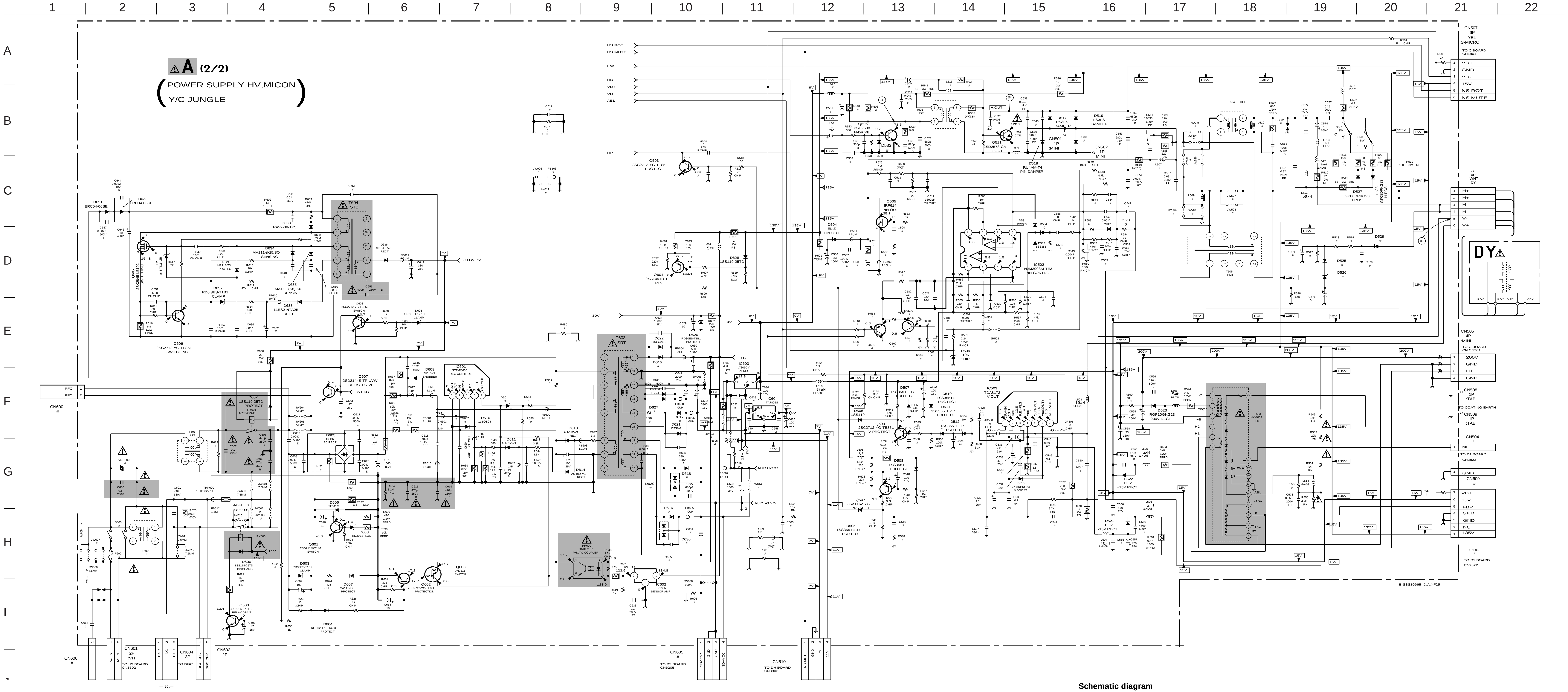


Schematic diagram
A(1/2) board ➡

(1) Schematic Diagram of A(1/2) Board



(2) Schematic Diagram of A(2/2) Board

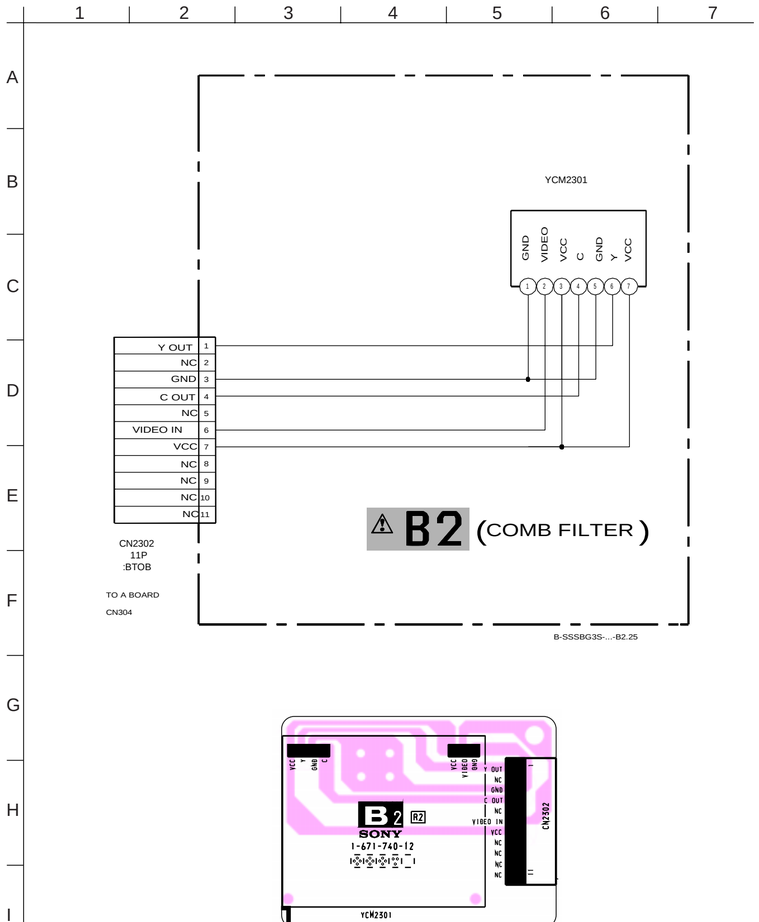


A (2/2)
POWER SUPPLY,HV,MICON
Y/C JUNGLE
T604 STB
T603 SRT
T501 HDT
T504 HLT
T505 PMT
T503 NX-4009 FBT
T601 LFT
T600
IC601 STR-F6656 REG CONTROL
IC603 L7809CV 9V-REG
IC604 TA7805S
IC502 NJM2903M-TE2 PIN-CONTROL
IC503 TDA8172 V.OUT
IC602 SE-135N SENSOR AMP
PH600 ON3171-R PHOTO COUPLER
Q605 2SK2845-LB102 SWITCHING
Q606 2SC2712-YG-TE85L SWITCHING
Q607 2SD2144S-TP-UVW RELAY DRIVE
Q608 2SC2712-YG-TE85L SWITCH
Q600 2SC2785TP-HFE RELAY DRIVE
Q601 2SD2114KT146 SWITCH
Q602 2SC2712-YG-TE85L PROTECTION
Q603 UN2111 SWITCH
Q503 2SC2712-YG-TE85L PROTECT
Q604 2SA1091R-T PE2
Q505 IRF614 PIN-OUT
Q506 2SC2688 H-DRIVE
Q511 2SD2578-CA H-OUT
Q509 2SC2712-YG-TE85L V-PROTECT
Q507 2SA1162-YG PROTECT
NS ROT
NS MUTE
EW
HD
VD+
VD-
ABL
HP
STBY 7V
ST-BY
+B
AUD+VCC
AUDI-GND
CN600 PFC PFC
CN601 2P :VH TO H3 BOARD CN3602
CN604 3P TO DGC
CN602 2P
CN606
CN605 TO B3 BOARD CN6205
CN510 TO DH BOARD CN3802
CN507 6P YEL :S-MICRO TO C BOARD CN1801
DY1 6P WHT :DY
CN505 4P :MINI TO C BOARD CN CN701
CN508 1P :TAB TO COATING EARTH
CN509 1P :TAB
CN504 TO D1 BOARD CN2823
CN609
CN503 TO D1 BOARD CN2822
DY
B-SSS10665-ID.A.XF25

Schematic diagram

← A(2/2) board

(3) Schematic Diagram of B2 Board



A BOARD

IC

IC001	B-10
IC002	C-10
IC003	A-9
IC100	B-5
IC201	B-11
IC203	B-3
IC204	B-2
IC301	B-6
IC503	J-5
IC601	J-8
IC602	H-6
IC603	D-8
IC604	D-10
IC901	I-13

TRANSISTOR

Q001	C-8
Q002	B-8
Q003	C-9
Q004	B-9
Q101	A-4
Q201	A-11
Q202	A-11
Q203	C-11
Q204	C-12
Q205	A-12
Q206	A-11
Q207	A-12
Q301	A-8
Q302	B-6
Q303	A-6
Q304	A-6
Q305	B-6
Q306	B-5
Q307	C-7
Q308	C-7
Q309	C-7
Q310	D-8
Q311	D-9
Q312	B-7
Q313	B-8
Q315	B-5
Q401	D-2
Q402	D-1
Q403	D-2
Q404	C-3
Q501	D-6
Q502	E-7
Q503	F-6
Q505	D-6
Q506	E-2
Q507	H-6
Q509	F-6
Q511	F-1
Q600	D-12
Q601	F-11
Q602	J-7
Q604	H-6
Q605	E-12
Q606	F-11
Q607	H-13
Q608	E-12
Q901	H-13

DIODE

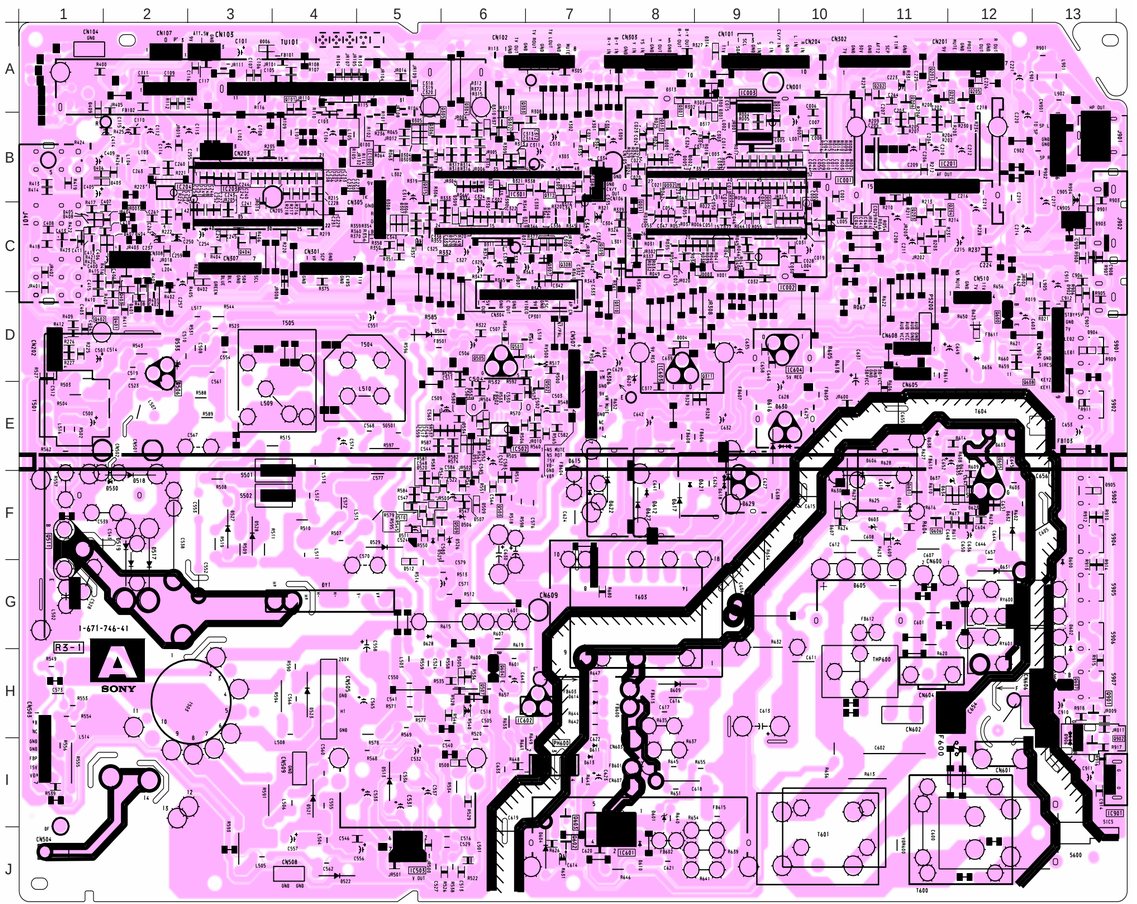
D001	B-8
D002	C-8
D003	C-9
D004	D-8
D005	B-8
D006	A-3
D100	B-5
D203	C-11
D300	A-9
D301	B-9
D302	B-6
D303	B-5
D304	B-5
D305	B-5
D306	C-5
D307	C-5
D308	C-5
D309	B-6
D310	A-6
D311	C-6
D312	C-6
D313	A-8
D315	B-7
D316	C-7
D317	B-9
D314	A-9
D319	C-6
D320	C-6
D321	B-6
D401	D-2
D402	D-3
D403	B-2
D404	C-2
D405	C-1
D406	B-1
D407	C-2
D408	C-1
D409	A-1
D504	D-5
D505	H-6
D506	F-6
D507	F-6
D508	I-6
D509	F-6
D510	F-5
D511	F-5
D512	G-5
D513	I-5
D517	F-2
D518	F-2
D519	F-2
D520	E-5
D521	I-4
D522	J-4
D523	H-4
D525	F-5
D527	F-3
D528	F-3
D529	F-5
D530	F-2
D531	E-6
D532	E-6
D533	D-2
D534	E-6
D600	G-13
D601	I-8
D602	G-13
D603	F-11
D604	J-7
D605	G-10
D606	E-11
D607	F-10
D608	F-11
D609	H-8
D611	I-7
D612	F-8
D613	I-7
D615	E-7
D616	E-9
D617	F-8
D618	F-9
D620	D-8
D621	F-9
D622	F-8
D623	F-12
D624	E-12
D625	D-12
D627	F-8
D628	G-5
D629	F-9
D630	E-10
D631	G-12
D632	F-12
D633	E-12
D634	F-11
D635	E-12
D636	D-12
D637	F-11
D638	E-11
D901	C-13
D902	C-13
D903	C-13
D904	D-13
D905	F-13
D906	I-13

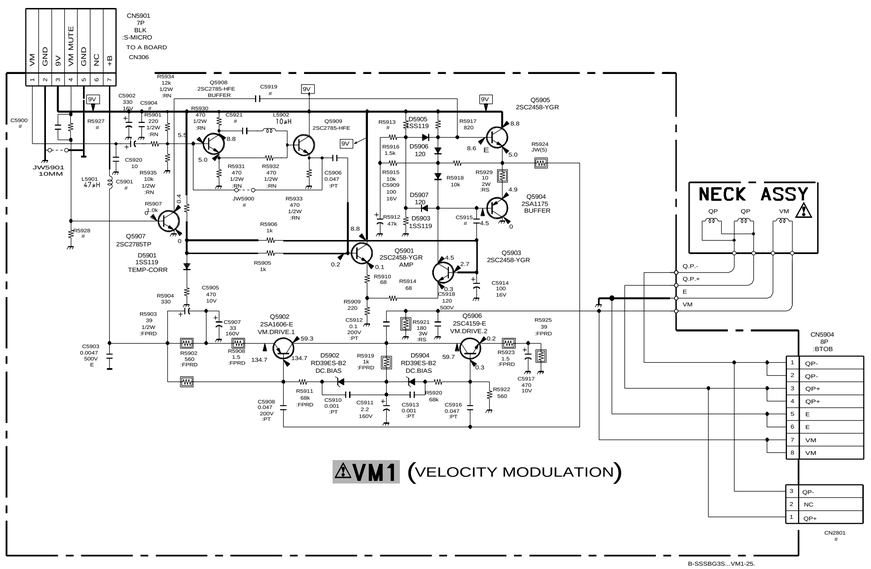
B2 [COMB FILTER] **A** [POWER SUPPLY, HV, MICON, Y/C JUNGLE]

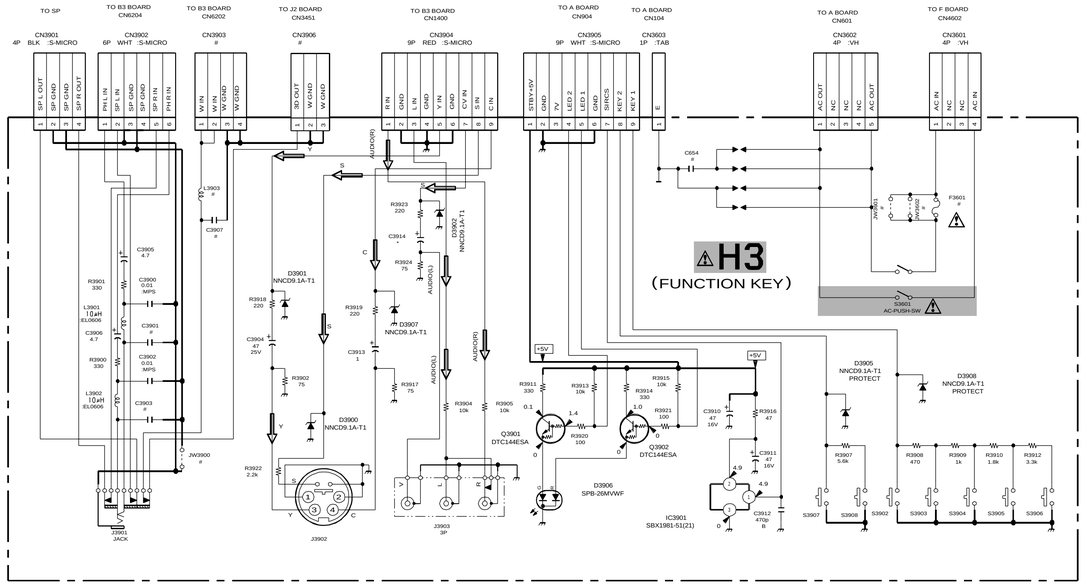
PRINTED WIRING BOARDS

– A Board –

NOTE:
The circuit indicated at left contains high voltage of over 600 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.





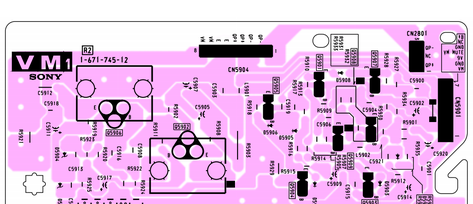


PRINTED WIRING BOARDS

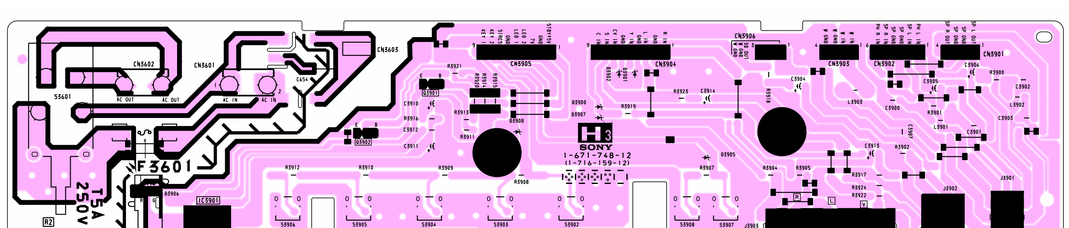
VM1 [VELOCITY MODULATION]

H3 [FUNCTION KEY]

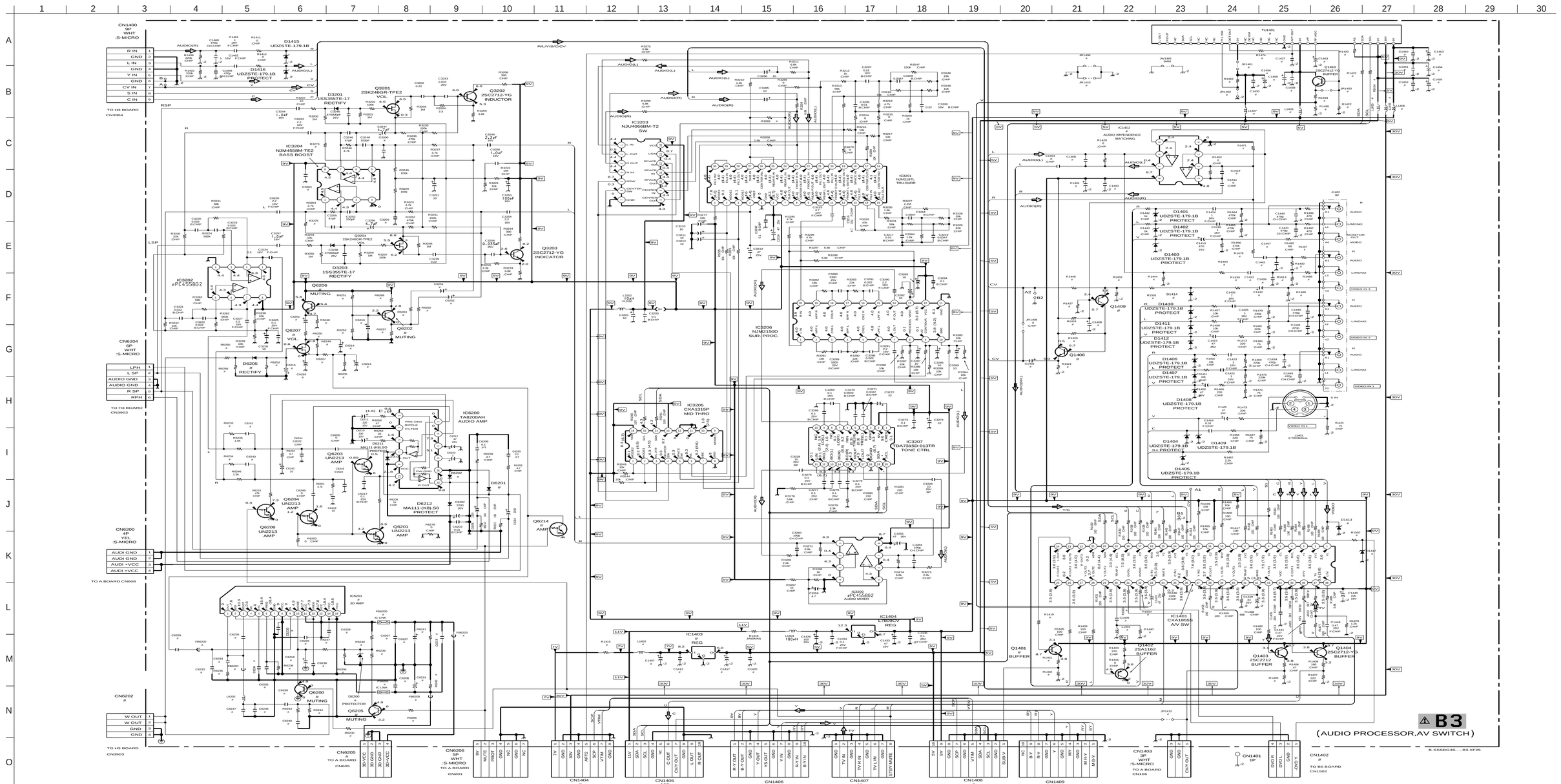
– VM1 Board –



– H3 Board –



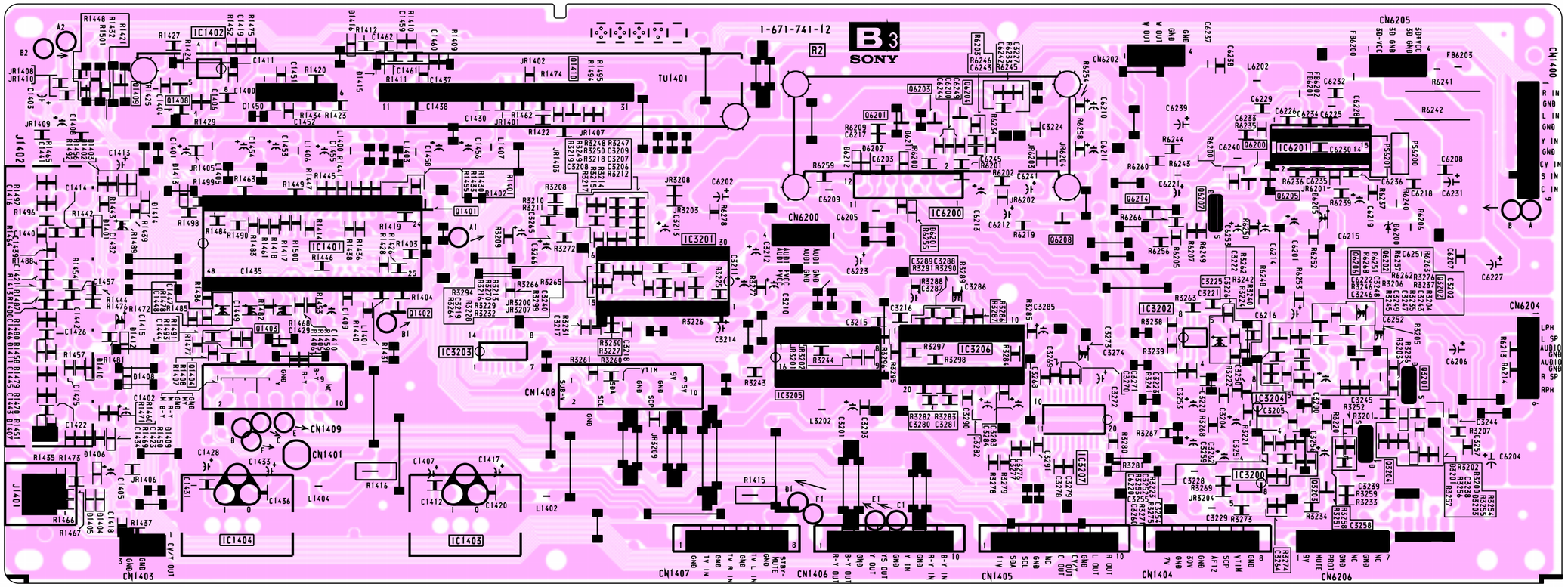
(5) Schematic Diagram of B3 Board



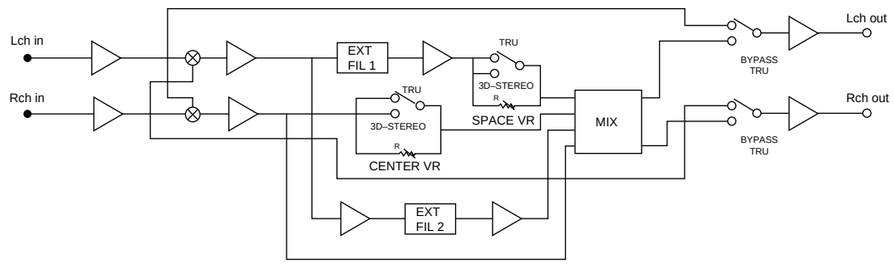
PRINTED WIRING BOARD

B3 [AUDIO PROSESSOR, AV SWITCH]

– B3 Board –



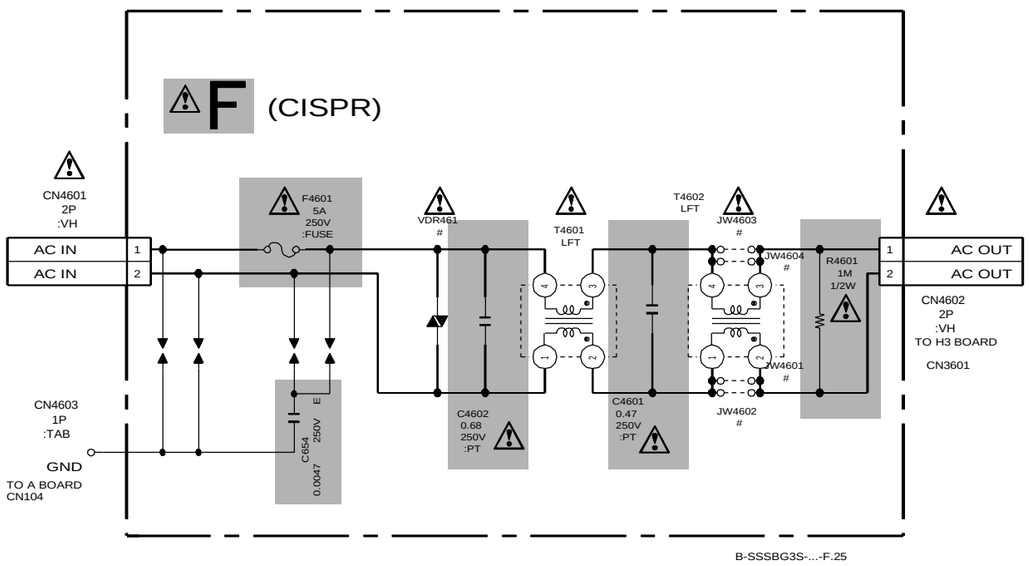
B3 BOARD IC3201 NJM2187L



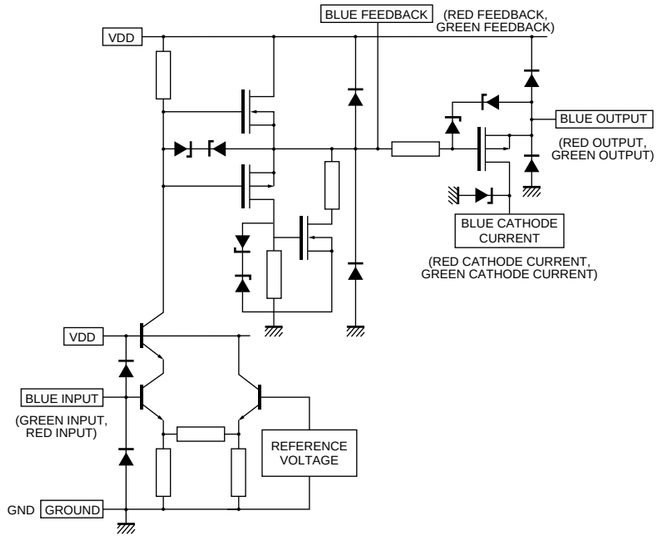
Schematic diagram

F board ➡

(6) Schematic Diagram of F Board



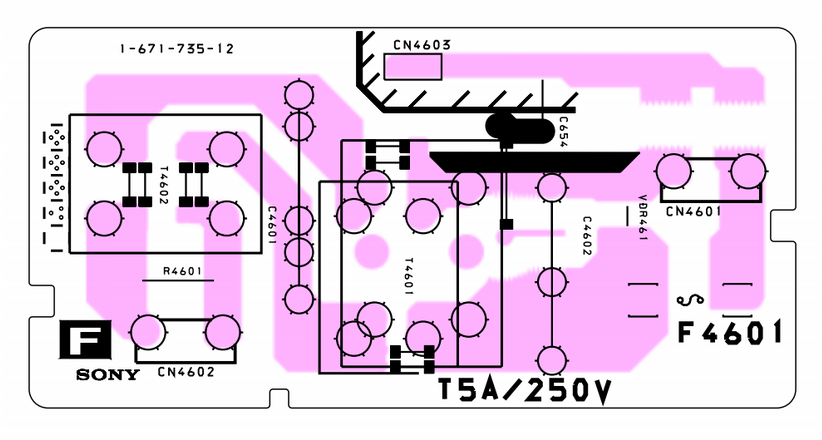
C BOARD IC701 STV5112



PRINTED WIRING BOARD

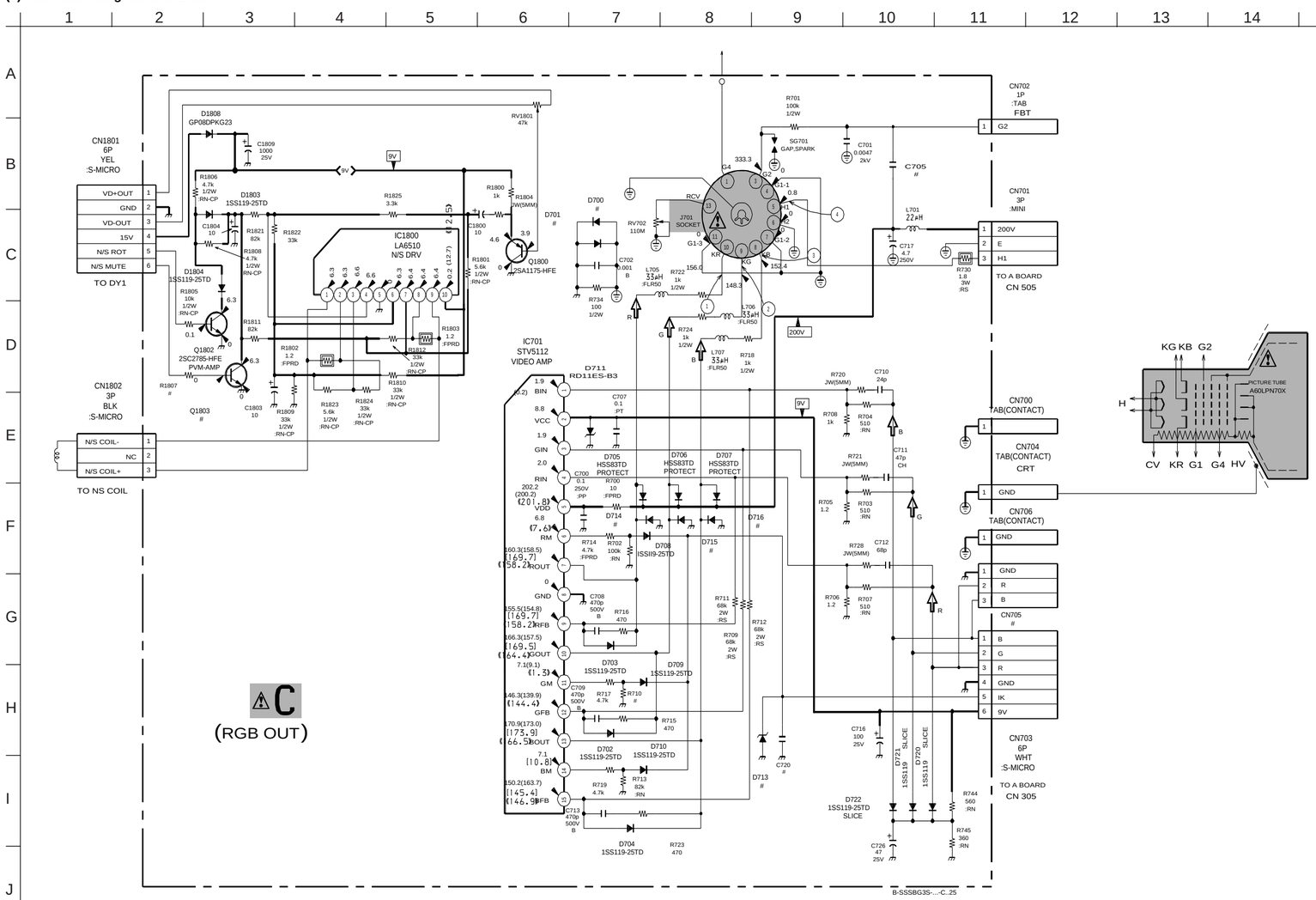
F [CISPR]

– F Board –



C BOARD WAVEFORMS

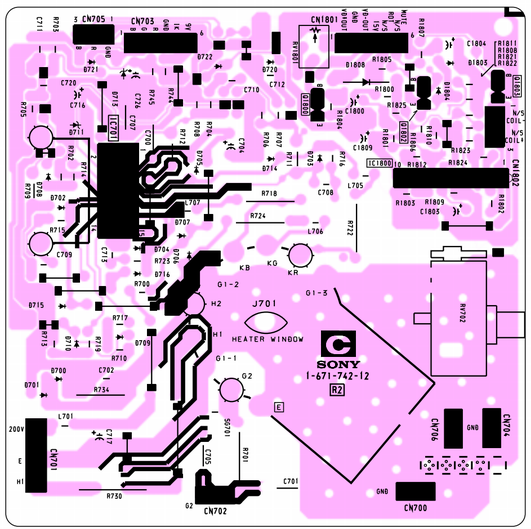
① PAL 122Vp-p (H)	① SECAM 125Vp-p (H)	① NTSC 140Vp-p (H)
② PAL/SECAM PAL : 122Vp-p (H) SECAM : 118Vp-p (H)	② NTSC 113Vp-p (H)	③ PAL/NTSC PAL : 135Vp-p (H) NTSC : 126Vp-p (H)
③ SECAM 115Vp-p (H)	④ PAL/NTSC : 23.1Vp-p (H) SECAM : 22.8Vp-p (H)	



PRINTED WIRING BOARD

C [RGB OUT]

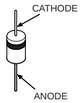
– C Board –



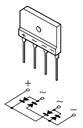
5-5. SEMICONDUCTORS

DIODE

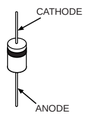
AU-01Z-V1
EL1Z
ERA22-08
GP08D
NNCD9.1A-T1
RD33EB3T
RGP02-17EL-6433



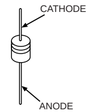
D3SB60



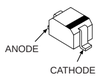
ERC04-06SE
HSS8370
RS3FS
RU4AM-T4



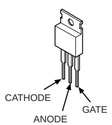
D1NS4
RD11ES-B3
RD20ES-B2
RD30ESB2
RD39ES-B2
RD6.8ES-B1
1SS119-25
11EQSO4
11ES2-7B5



DTZ-TT11-15B
DTZ10B
MA111-(K8).S0
UDZS-TE17-5.1B
UDZS-TE17-9.1B
1SS355TE-17

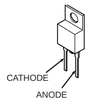


5P6M

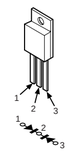


D3L60

D5S6M

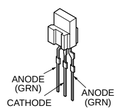


FMX-12S



LED

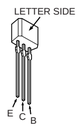
SPB-26MVWF



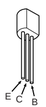
TRANSISTOR

UN2111
UN2211
UN2213
2SA1162-G
2SC2712-YG
2SD2114K

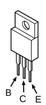
DTC144ESA
2SA1175-HFE
2SC2785-HFE



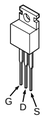
2SA1091-0



2SA1606-E
2SC4159-E

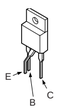


IRF614

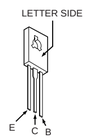


2SK246-GR

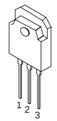
2SK2845-LB102



2SC2688-LK



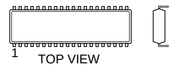
2SD2578-CA



2SC2458-YGR
2SD2144S-UVW

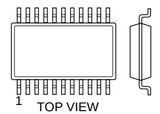
IC

CXA11315P (16PIN)
CXA1855S (48PIN)
CXA2139S (64PIN)
CXP86461-621S (64PIN)
M24C08-BN6(8PIN)
NJM2150D (20PIN)
NJM2187L (30PIN)
STV5112 (15PIN)



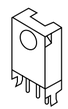
Dual In-line Package
Pin 6～98

MM1319AFBE (7PIN)
NJM2903M (8PIN)
NJU4066BM (14PIN)
TDA7315D013TR (20PIN)
µPC4558G2 (8PIN)



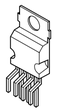
Small Out-line L-leaded Package
Pin 8～98

SBX1981-51(21)



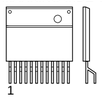
SE-135N

TDA8172



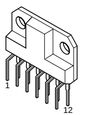
STR-F6656

MARKING SIDE VIEW

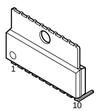


Zig-zag In -line Package
Pin 6～99

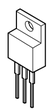
TA8200AH



LA6510



NJM7809-FA
TA7805S



SECTION 6
EXPLODED VIEWS

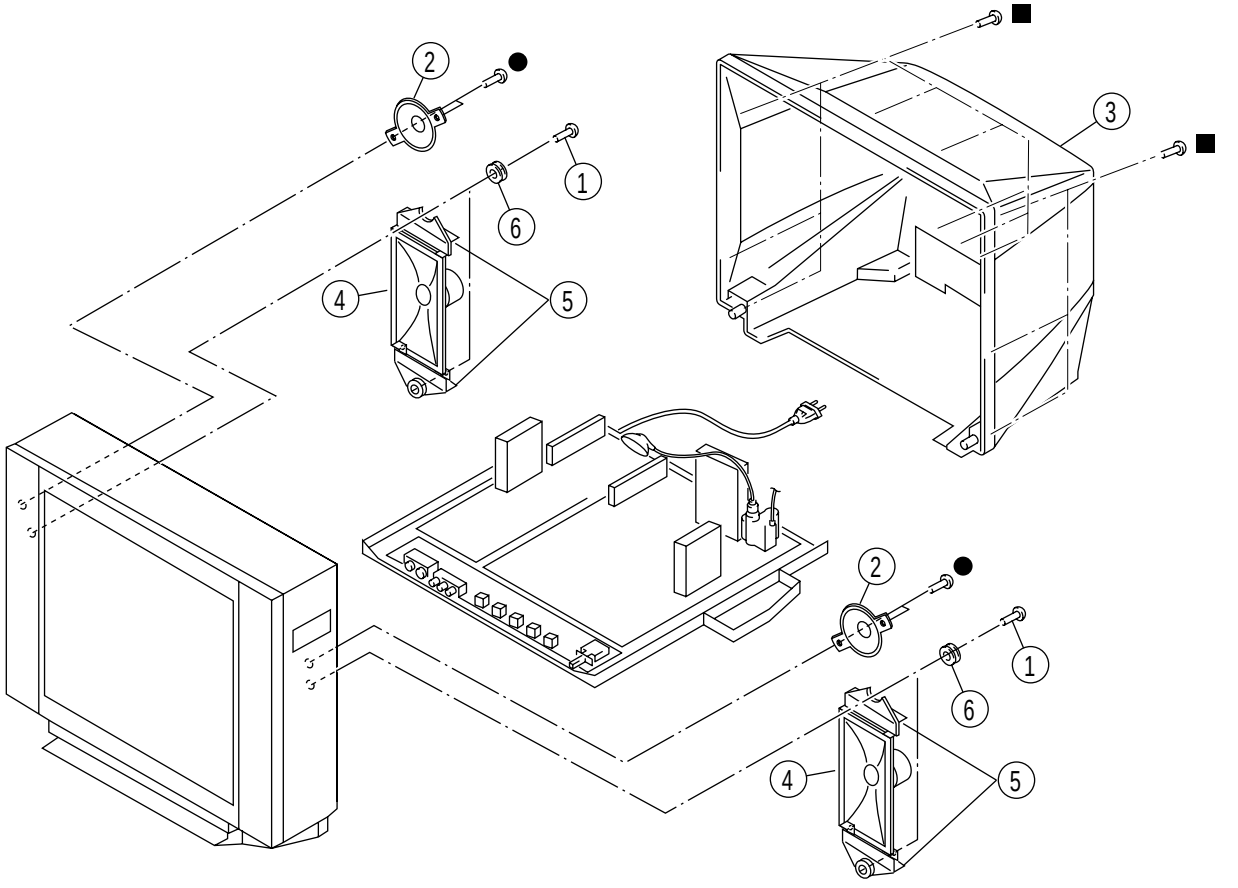
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. SPEAKER BRACKET

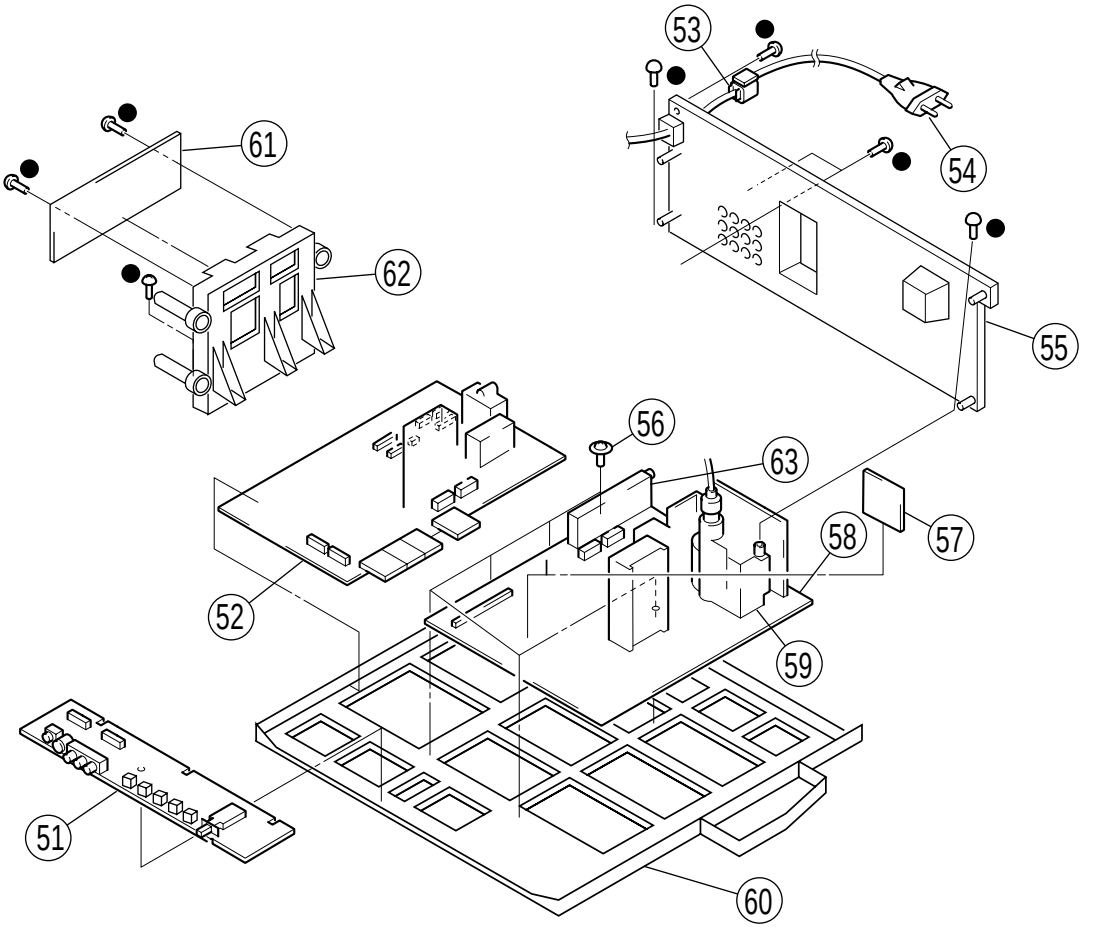
■: 7-685-663-71 SCREW +BVTP 4 × 16
●: 7-685-648-79 SCREW +BVTP 3 × 12



REF. NO.		PART NO.	DESCRIPTION	REMARK
1		4-302-404-03	SCREW (WASHER HEAD) (+P 4X16)	
2		1-529-190-11	SPEAKER (5CM)	
3	⚠	4-065-571-01	COVER, REAR	
4		1-503-902-11	SPEAKER (15 x 6.5CM)	
5		4-046-981-02	BRACKET, SPEAKER	
6	*	4-038-987-11	CUSHION, SPEAKER	

6-2. CHASSIS

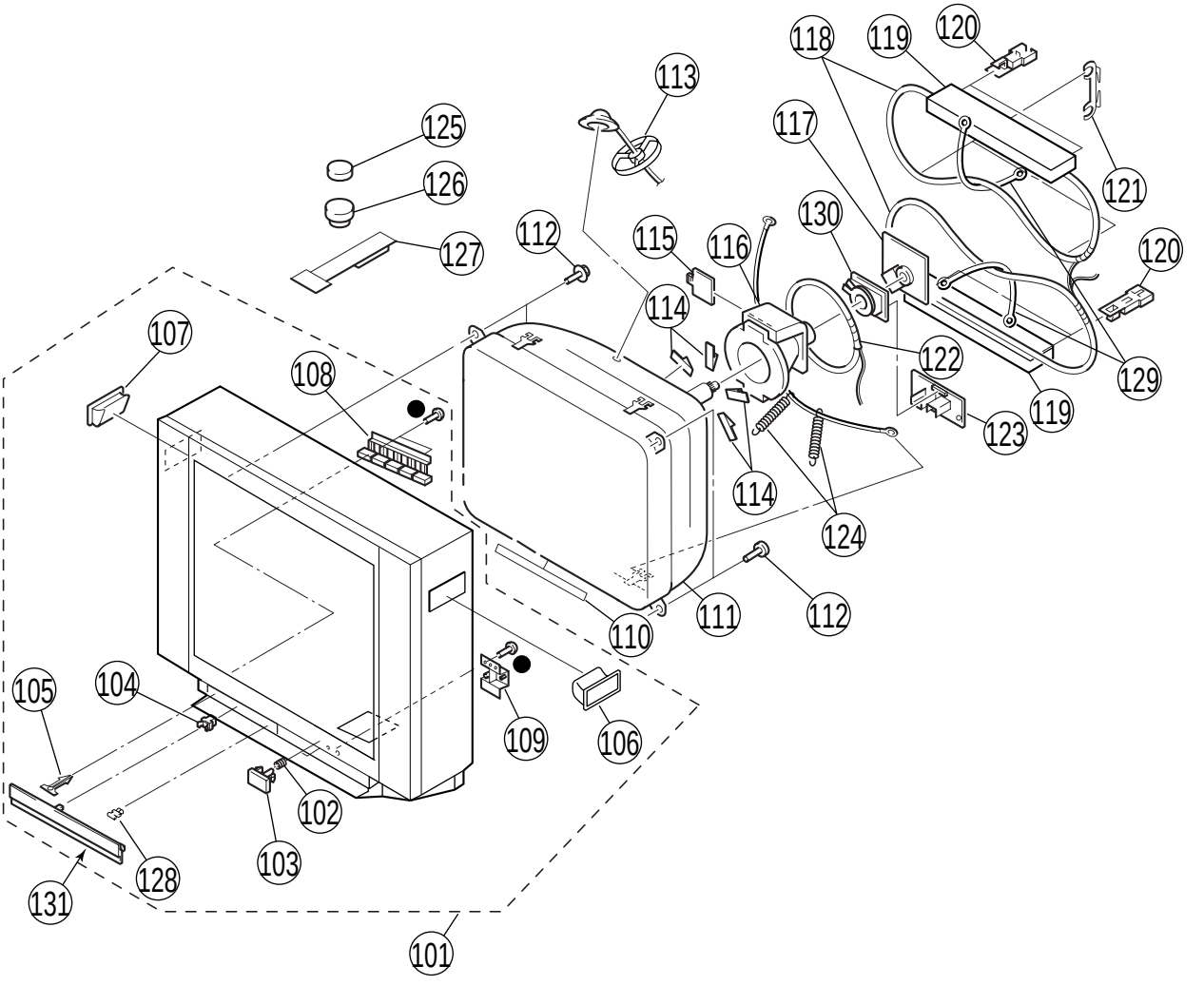
●: 7-685-648-79 SCREW BVTP 3 × 12



REF. NO.		PART NO.	DESCRIPTION	REMARK
51	*	A-1372-866-A	H3 BOARD, MOUNTED	
52	*	A-1136-131-A	B3 BOARD, COMPLETE	
53	⚠	4-022-115-21	HOLDER, AC CORD	
54	⚠	1-574-062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V	
55		4-066-684-22	BRACKET, TERMINAL	
56		4-046-797-01	SCREW (3X12), (+)BVTAP	
57	*	A-1131-417-A	B2 BOARD, MOUNTED	
58	*	A-1299-314-A	A BOARD, COMPLETE	
59	⚠	1-453-284-11	TRANSFORMER ASSY, FLYBACK (NX-4009//M3I4)	
60	*	4-066-681-04	BRACKET, MAIN	
61	*	A-1241-361-A	F BOARD, MOUNTED	
62	*	4-066-682-01	BRACKET, F PWB	
63		8-598-449-10	TUNER, FSS BTF-LG433	

6-3. PICTURE TUBE

●: 7-685-648-79 SCREW BVTP 3 × 12



REF. NO.		PART NO.	DESCRIPTION	REMARK
101		X-4038-159-2	BEZNET ASSY	102-109, 128, 131
102		4-036-405-11	SPRING, COMPRESSION	
103		4-065-508-01	BUTTON, POWER	
104		4-047-464-01	CATCHER, PUSH	
105		4-067-062-01	DAMPER (2P)	
106		X-4035-862-4	HANDLE ASSY (R)	
107		X-4035-861-4	HANDLE ASSY (L)	
108		4-065-509-01	BUTTON, CONTROL	
109	*	4-065-510-01	GUIDE, LIGHT	
110		4-054-468-01	SHEET, BLOTTING	
111	⚠	8-733-250-05	PICTURE TUBE (A60LPN70X)	
112		4-046-765-01	SCREW, TAPPING 7+CROWN WASHER	
113	*	3-704-372-41	HOLDER, HV CABLE	
114		4-046-600-11	SPACER, DY	
115		4-057-714-01	PIECE ASSY, TLH CORRECTION	

REF. NO.		PART NO.	DESCRIPTION	REMARK
116	⚠	1-451-475-11	DEFLECTION YOKE (Y25RSA)	
117	*	A-1331-911-A	C BOARD, MOUNTED	
118	⚠	1-403-619-81	COIL, DEMAGNETIZATION	
119	*	4-069-320-01	CUSHION (50X290), DGC	
120	*	4-065-572-01	CLIP (25RSN), DGC	
121		4-061-369-01	HOLDER, DEGAUSE COIL	
122		1-452-896-61	COIL, NA ROTATION (RT-200)	
123	*	A-1342-476-A	VM1 BOARD, MOUNTED	
124		4-369-318-61	SPRING, TENSION	
125		1-452-032-00	MAGNET,DISC	
126		1-452-014-11	CIRCULAR DISC MAGNET B	
127		4-051-734-42	PIECE B(120), CONV. CORRECT	
128		4-032-761-01	SHAFT (S), DOOR	
129		4-068-028-22	BAND, DGC	
130		8-453-011-21	NA299-S	
131		4-070-385-51	DOOR, CONTROL	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : µF, PF : µµF

COILS
- MMH : mH, UH : µH

REF.NO.	PART NO.	DESCRIPTION			REMARK
*	A-1299-314-A	A BOARD COMPLETE			
		**********			
	1-466-162-42	BLOCK, COM FILTER (CFB-4)			
*	4-040-983-41	TERMINAL BOARD (D)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	4-382-854-21	SCREW (M3X14), P, SW (+)			
		<CAPACITOR>			
C004	1-163-001-51	CERAMIC CHIP	220PF	10% 50V	
C005	1-163-001-51	CERAMIC CHIP	220PF	10% 50V	
C006	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C007	1-104-664-11	ELECT	47UF	20.00% 16V	
C013	1-164-232-11	CERAMIC CHIP	0.01UF	10.00% 50V	
C014	1-104-664-11	ELECT	47UF	20.00% 25V	
C015	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C016	1-163-243-11	CERAMIC CHIP	47PF	5.00% 50V	
C017	1-163-113-00	CERAMIC CHIP	68PF	10% 50V	
C019	1-104-664-11	ELECT	47UF	20.00% 25V	
C022	1-163-227-51	CERAMIC CHIP	10PF	0.50PF 50V	
C023	1-163-227-51	CERAMIC CHIP	10PF	0.50PF 50V	
C024	1-163-227-51	CERAMIC CHIP	10PF	0.50PF 50V	
C026	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C027	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C028	1-163-037-11	CERAMIC CHIP	0.022UF	10.00% 50V	
C030	1-126-965-11	ELECT	22UF	20.00% 50V	
C031	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C032	1-107-823-51	CERAMIC CHIP	470000PF	10% 16V	
C034	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C041	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C042	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C043	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C044	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C047	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C103	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C104	1-104-665-11	ELECT	100UF	20.00% 10V	
C107	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C108	1-104-664-11	ELECT	47UF	20.00% 16V	
C109	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C110	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C111	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C112	1-104-664-11	ELECT	47UF	20.00% 16V	
C113	1-104-664-11	ELECT	47UF	20.00% 25V	
C114	1-126-967-11	ELECT	47UF	20.00% 50V	
C300	1-164-505-11	CERAMIC CHIP	2.2UF	16V	
C301	1-126-935-11	ELECT	470UF	20.00% 16V	
C302	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C303	1-125-798-91	ELECT	0.47UF	20.00% 63V	
C304	1-126-967-11	ELECT	47UF	20.00% 50V	
C305	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C306	1-163-233-51	CERAMIC CHIP	18PF	5.00% 50V	
C307	1-163-233-51	CERAMIC CHIP	18PF	5.00% 50V	
C308	1-163-125-00	CERAMIC CHIP	220PF	5.00% 50V	
C309	1-126-957-11	ELECT	0.22UF	20.00% 50V	
C311	1-125-797-91	ELECT	10UF	20.00% 50V	
C312	1-164-346-51	CERAMIC CHIP	1UF	10% 16V	
C313	1-164-346-51	CERAMIC CHIP	1UF	10% 16V	
C315	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C316	1-104-664-11	ELECT	47UF	20.00% 25V	
C317	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C318	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C319	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C320	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C322	1-163-005-51	CERAMIC CHIP	470PF	10% 50V	
C323	1-126-965-11	ELECT	22UF	20.00% 50V	
C324	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00% 50V	
C325	1-125-799-91	ELECT	1UF	20.00% 63V	
C327	1-126-965-11	ELECT	22UF	20.00% 50V	
C328	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C329	1-126-965-11	ELECT	22UF	20.00% 50V	
C330	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C331	1-125-805-91	ELECT	4.7UF	20.00% 50V	
C332	1-125-805-91	ELECT	4.7UF	20.00% 50V	
C335	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C336	1-164-004-51	CERAMIC CHIP	0.1UF	10.00% 25V	
C337	1-125-800-91	ELECT	2.2UF	20.00% 63V	
C338	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00% 50V	
C341	1-115-340-51	CERAMIC CHIP	0.22UF	10.00% 25V	
C342	1-163-125-00	CERAMIC CHIP	220PF	5.00% 50V	
C502	1-163-275-11	CERAMIC CHIP	0.001UF	5.00% 50V	
C506	1-107-638-11	ELECT	33UF	20.00% 160V	
C507	1-161-830-00	CERAMIC	0.0047UF	500V	
C510	1-102-112-00	CERAMIC	330PF	10.00% 50V	
C513	1-163-263-51	CERAMIC CHIP	330PF	10% 50V	
C514	1-106-383-00	MYLAR	0.047UF	10.00% 200V	
C517	1-164-182-11	CERAMIC CHIP	3300PF	10% 50V	
C518	1-104-665-11	ELECT	100UF	20.00% 10V	
C519	1-102-212-00	CERAMIC	820PF	10.00% 500V	
C521	1-126-934-11	ELECT	220UF	20.00% 16V	
C522	1-126-933-11	ELECT	100UF	20.00% 16V	
C523	1-102-002-00	CERAMIC	680PF	10.00% 500V	
C524	1-126-967-11	ELECT	47UF	20.00% 50V	
C526	1-130-495-00	MYLAR	0.1UF	5.00% 50V	
C527	1-102-820-00	CERAMIC	330PF	5.00% 50V	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

A

REF.NO.		PART NO.	DESCRIPTION			REMARK
C528		1-161-754-00	CERAMIC	0.001UF	10.00%	2KV
C530		1-137-372-11	MYLAR	0.022UF	5.00%	50V
C531		1-125-800-91	ELECT	2.2UF	20.00%	63V
C532		1-126-941-11	ELECT	470UF	20.00%	25V
C533		1-126-941-11	ELECT	470UF	20.00%	25V
C536		1-136-165-00	MYLAR	0.1UF	5.00%	50V
C537		1-126-969-11	ELECT	220UF	20.00%	50V
C538		1-136-617-11	FILM	0.019UF	3.00%	2KV
C539		1-130-959-61	FILM	0.047UF	5.00%	400V
C540		1-136-171-00	MYLAR	0.33UF	5.00%	50V
C546		1-165-319-11	CERAMIC CHIP	0.1UF		50V
C548		1-163-143-00	CERAMIC CHIP	0.0012UF	5.00%	50V
C549		1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C550		1-106-220-00	MYLAR	0.1UF	10.00%	100V
C551		1-125-799-91	ELECT	1UF	20.00%	63V
C552		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C553		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C554		1-137-417-11	MYLAR	0.0047UF	10.00%	200V
C556		1-126-941-11	ELECT	470UF	20.00%	25V
C557		1-126-941-11	ELECT	470UF	20.00%	25V
C558		1-123-024-21	ELECT	33UF		160V
C560		1-102-228-00	CERAMIC	470PF	10.00%	500V
C561		1-129-708-91	FILM	0.0033UF	5.00%	630V
C562		1-102-228-00	CERAMIC	470PF	10.00%	500V
C563		1-164-344-11	CERAMIC CHIP	0.068UF	10.00%	25V
C564		1-163-038-00	CERAMIC CHIP	0.1UF		25V
C565		1-107-655-11	ELECT	47UF	20.00%	250V
C566		1-102-244-00	CERAMIC	220PF	10.00%	500V
C567		1-115-520-11	FILM	0.68UF	5.00%	250V
C568		1-102-228-00	CERAMIC	470PF	10.00%	500V
C570		1-115-521-11	FILM	0.82UF	5.00%	250V
C572		1-107-846-11	FILM	0.1UF	5.00%	250V
C573		1-106-387-00	MYLAR	0.068UF	10.00%	200V
C574		1-107-636-11	ELECT	10UF	20.00%	160V
C576		1-130-495-00	MYLAR	0.1UF	5.00%	50V
C577		1-106-395-00	MYLAR	0.15UF	10.00%	200V
C582		1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C586		1-216-295-61	SHORT CHIP	0		
C600	⚠	1-104-705-11	MYLAR	0.1UF	20.00%	250V
C601		1-130-338-91	FILM	0.01UF	5.00%	630V
C602	⚠	1-104-705-11	MYLAR	0.1UF	20.00%	250V
C603		1-104-664-11	ELECT	47UF	20.00%	25V
C604		1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C605	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C606	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C607		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C608		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C609		1-126-968-11	ELECT	100UF	20.00%	50V
C610		1-125-797-91	ELECT	10UF	20.00%	50V
C611		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C612		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C613		1-125-906-11	ELECT	560UF	20.00%	450V
C614		1-125-797-91	ELECT	10UF	20.00%	50V
C615	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C616		1-130-202-00	FILM	0.022UF	5.00%	400V
C617		1-107-792-11	CERAMIC	100PF	5.00%	1KV
C618		1-125-893-11	FILM	680PF	3.00%	1.5KV

REF.NO.		PART NO.	DESCRIPTION			REMARK
C619	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C620		1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C621		1-102-114-00	CERAMIC	470PF	10.00%	50V
C622		1-102-119-00	CERAMIC	0.0015UF	10.00%	50V
C623		1-104-665-11	ELECT	100UF	20.00%	25V
C624		1-125-772-91	CERAMIC	1500PF	10.00%	2KV
C626		1-102-002-00	CERAMIC	680PF	10.00%	500V
C627		1-102-002-00	CERAMIC	680PF	10.00%	500V
C628		1-126-952-11	ELECT	1000UF	20.00%	35V
C629		1-125-797-91	ELECT	10UF	20.00%	50V
C630		1-125-494-11	ELECT(BLOCK)	560UF	20.00%	160V
C632		1-128-339-11	ELECT	2200UF	20.00%	16V
C633		1-104-999-11	MYLAR	0.1UF	10.00%	200V
C634		1-126-933-11	ELECT	100UF	20.00%	16V
C635		1-104-665-11	ELECT	100UF	20.00%	10V
C636		1-104-760-51	CERAMIC CHIP	0.047UF	10.00%	50V
C641		1-102-002-00	CERAMIC	680PF	10.00%	500V
C642		1-107-890-11	ELECT	2200UF	20.00%	25V
C643		1-104-665-11	ELECT	100UF	20.00%	10V
C644		1-104-331-11	CERAMIC	0.0022UF	10.00%	1KV
C645		1-137-605-11	MYLAR	0.01UF	10.00%	250V
C646		1-107-679-91	ELECT	10UF	20.00%	450V
C647		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C649		1-126-940-11	ELECT	330UF	20.00%	25V
C650		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C651		1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C652		1-126-965-11	ELECT	22UF	20.00%	50V
C653		1-104-664-11	ELECT	47UF	20.00%	25V
C655	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C657		1-101-821-00	CERAMIC	0.0022UF		500V
C912		1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C913		1-104-665-11	ELECT	100UF	20.00%	10V

<CONNECTOR>

CN101	*	1-779-890-11	CONNECTOR, BOARD TO BOARD 10P
CN102	*	1-779-889-11	CONNECTOR, BOARD TO BOARD 8P
CN104		1-695-915-11	TAB (CONTACT)
CN105	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN106	*	1-564-506-11	PLUG, CONNECTOR 3P
CN201	*	1-564-508-11	PLUG, CONNECTOR 5P
CN202	*	1-508-847-00	PIN, CONNECTOR 4P
CN304	*	1-766-955-11	CONNECTOR, BOARD TO BOARD 11P
CN305	*	1-564-509-11	PLUG, CONNECTOR 6P
CN501	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN502	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN505		1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P
CN507	*	1-564-509-11	PLUG, CONNECTOR 6P
CN508		1-695-915-11	TAB (CONTACT)
CN509		1-695-915-11	TAB (CONTACT)
CN601	*	1-580-843-11	PIN, CONNECTOR (POWER)
CN602	*	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN603	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN604	*	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P
CN608	*	1-564-507-11	PLUG, CONNECTOR 4P
CN904	*	1-564-512-11	PLUG, CONNECTOR 9P

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REF.NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D001	8-719-988-61	DIODE 1SS355TE-17	
D002	8-719-988-61	DIODE 1SS355TE-17	
D005	8-719-988-61	DIODE 1SS355TE-17	
D006	1-216-295-61	SHORT CHIP 0	
D300	1-216-295-61	SHORT CHIP 0	
D301	8-719-988-61	DIODE 1SS355TE-17	
D303	8-719-988-61	DIODE 1SS355TE-17	
D304	8-719-988-61	DIODE 1SS355TE-17	
D305	8-719-988-61	DIODE 1SS355TE-17	
D306	8-719-988-61	DIODE 1SS355TE-17	
D307	8-719-988-61	DIODE 1SS355TE-17	
D308	8-719-988-61	DIODE 1SS355TE-17	
D309	8-719-069-54	DIODE UDZS-TE17-5.1B	
D311	8-719-988-61	DIODE 1SS355TE-17	
D312	8-719-988-61	DIODE 1SS355TE-17	
D313	8-719-988-61	DIODE 1SS355TE-17	
D315	8-719-988-61	DIODE 1SS355TE-17	
D316	8-719-978-33	DIODE UDZS-TE17-6.8B	
D320	8-719-069-60	DIODE UDZS-TE17-9.1B	
D321	8-719-069-60	DIODE UDZS-TE17-9.1B	
D504	8-719-936-85	DIODE RGP10GPKG23	
D505	8-719-988-61	DIODE 1SS355TE-17	
D506	8-719-921-20	DIODE 1SS119-25TD	
D507	8-719-988-61	DIODE 1SS355TE-17	
D508	8-719-988-61	DIODE 1SS355TE-17	
D509	1-216-073-61	RES-CHIP 10G 5%	1/10W
D510	8-719-988-61	DIODE 1SS355TE-17	
D511	8-719-988-61	DIODE 1SS355TE-17	
D512	8-719-988-61	DIODE 1SS355TE-17	
D513	8-719-908-03	DIODE GP08DPKG23	
D517	8-719-312-71	DIODE RS3FS	
D518	8-719-074-35	DIODE RU4AM-T4	
D519	8-719-312-71	DIODE RS3FS	
D520	1-216-295-61	SHORT CHIP 0	
D521	8-719-936-85	DIODE RGP10GPKG23	
D522	8-719-936-85	DIODE RGP10GPKG23	
D523	8-719-936-85	DIODE RGP10GPKG23	
D527	8-719-908-03	DIODE GP08DPKG23	
D528	8-719-908-03	DIODE GP08DPKG23	
D531	8-719-988-61	DIODE 1SS355TE-17	
D532	8-719-988-61	DIODE 1SS355TE-17	
D534	1-216-295-61	SHORT CHIP 0	
D600	8-719-921-20	DIODE 1SS119-25TD	
D602	8-719-921-20	DIODE 1SS119-25TD	
D603	8-719-150-92	DIODE RD33ES-T1B2	
D604	8-719-028-72	DIODE RGP02-17PKG23	
D605	8-719-510-27	DIODE D3SB60	
D606	8-719-108-18	DIODE TF541M	
D607	8-719-404-50	DIODE MA111-TX	
D608	8-719-110-53	DIODE RD20ES-T1B2	
D609	8-719-075-79	DIODE BYV26E/23	
D610	8-719-210-21	DIODE 11EQS04-NTA1B	
D611	8-719-073-86	DIODE AU-01Z-V1	
D613	8-719-073-86	DIODE AU-01Z-V1	
D614	8-719-073-86	DIODE AU-01Z-V1	
D618	8-719-067-18	DIODE RN4Z	
D620	8-719-110-72	DIODE RD30ES-T1B1	
D621	8-719-071-38	DIODE D5S6M	
D622	8-719-077-49	DIODE D3L60	
D623	8-719-056-91	DIODE UDZ-TE-17-15B	
D624	8-719-404-50	DIODE MA111-(K8).S0	
D625	8-719-069-60	DIODE UDZS-TE17-10B	
D627	8-719-067-18	DIODE RN4Z	
D628	8-719-921-20	DIODE 1SS119-25TD	
D631	8-719-068-00	DIODE ERC04-06SE	
D632	8-719-068-00	DIODE ERC04-06SE	
D633	8-719-948-45	DIODE ERA22-08TP3	
D634	8-719-404-50	DIODE MA111-(K8).S0	
D635	8-719-016-74	DIODE 1SS352-TPH3	
D635	8-719-073-01	DIODE MA111-(K8).S0	
D636	8-719-510-02	DIODE D1NS4-TA2	
D637	8-719-109-96	DIODE RD6.8ES-T1B1	
D638	8-719-200-82	DIODE 11ES2-TB5	
		<CONNECTOR>	
DY1	* 1-580-798-11	CONNECTOR PIN (DY) 6P	
		<FERRITE BEAD>	
FB501	1-410-397-21	FERRITE 1.1UH	
FB502	1-410-397-21	FERRITE 1.1UH	
FB600	1-410-397-21	FERRITE 1.1UH	
FB601	1-410-397-21	FERRITE 1.1UH	
FB602	1-410-397-21	FERRITE 1.1UH	
FB603	1-410-397-21	FERRITE 1.1UH	
FB604	1-412-911-31	FERRITE 0UH	
FB605	1-412-911-31	FERRITE 0UH	
FB606	1-412-911-31	FERRITE 0UH	
FB607	1-410-397-21	FERRITE 1.1UH	
FB608	1-412-911-31	FERRITE 0UH	
FB611	1-410-397-21	FERRITE 1.1UH	
FB612	1-410-397-21	FERRITE 1.1UH	
FB613	1-410-397-21	FERRITE 1.1UH	
FB615	1-410-397-21	FERRITE 1.1UH	
		<IC>	
IC001	8-752-905-64	IC CXP86461-621S	
IC002	8-759-371-21	IC MM1319AFBE	
IC003	8-759-527-71	IC M24C08-BN6	
IC301	8-752-090-41	IC CXA2139S	
IC502	8-759-700-07	IC NJM2903M-TE2	
IC503	8-759-980-58	IC TDA8172	
IC601	8-749-014-48	IC STR-F6656	
IC602	8-749-920-61	IC SE-135N	
IC603	8-759-701-59	IC L7809CV	
IC604	8-759-231-53	IC L7805CV	
		<CHIP CONDUCTOR>	
JR001	1-216-295-61	SHORT CHIP 0	
JR002	1-216-295-61	SHORT CHIP 0	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION		REMARK
JR004	1-216-295-61	SHORT CHIP	0	
JR005	1-216-295-61	SHORT CHIP	0	
JR006	1-216-295-61	SHORT CHIP	0	
JR007	1-216-295-61	SHORT CHIP	0	
JR008	1-216-295-61	SHORT CHIP	0	
JR010	1-216-295-61	SHORT CHIP	0	
JR012	1-216-295-61	SHORT CHIP	0	
JR014	1-216-295-61	SHORT CHIP	0	
JR015	1-216-295-61	SHORT CHIP	0	
JR016	1-216-295-61	SHORT CHIP	0	
JR102	1-216-295-61	SHORT CHIP	0	
JR109	1-216-295-61	SHORT CHIP	0	
JR301	1-216-295-61	SHORT CHIP	0	
JR303	1-216-295-61	SHORT CHIP	0	
JR500	1-216-295-61	SHORT CHIP	0	
JR501	1-216-295-61	SHORT CHIP	0	
JR503	1-216-295-61	SHORT CHIP	0	
JR600	1-216-295-61	SHORT CHIP	0	
		<COIL>		
L002	1-414-856-11	INDUCTOR	10UH	
L003	1-414-180-11	INDUCTOR	3.3UH	
L005	1-414-233-22	INDUCTOR CHIP	0UH	
L102	1-414-856-11	INDUCTOR	10UH	
L103	1-414-856-11	INDUCTOR	10UH	
L104	1-414-856-11	INDUCTOR	10UH	
L105	1-414-856-11	INDUCTOR	10UH	
L301	1-414-189-31	INDUCTOR	100UH	
L302	1-414-185-41	INDUCTOR	22UH	
L501	1-412-525-31	INDUCTOR	10UH	
L502	1-422-613-11	COIL, AIR CORE		
L503	1-412-525-31	INDUCTOR	10UH	
L504	1-412-525-31	INDUCTOR	10UH	
L507	1-459-111-00	INDUCTOR	10MH	
L511	1-406-978-11	INDUCTOR	150UH	
L512	1-412-549-31	INDUCTOR	1MH	
L513	1-412-549-31	INDUCTOR	1MH	
L515	1-459-104-00	COIL, WITH CORE		
L518	1-414-187-11	INDUCTOR	47UH	
L601	1-412-527-11	INDUCTOR	15UH	
L905	1-414-856-11	INDUCTOR	10UH	
		<PHOTO COUPLER>		
PH600 ⚠	8-749-924-35	PHOTO COUPLER ON3171-R		
		<TRANSISTOR>		
Q001	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q002	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q003	8-729-424-11	TRANSISTOR UN2111-TX		
Q004	8-729-421-20	TRANSISTOR UN2211-TX		
Q101	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q301	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q302	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q303	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		

REF.NO.	PART NO.	DESCRIPTION		REMARK
Q305	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q306	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q307	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q308	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q312	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q313	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q315	8-729-421-17	TRANSISTOR UN2213-TX		
Q503	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q505	8-729-931-45	TRANSISTOR IRF614		
Q506	8-729-119-80	TRANSISTOR 2SC2688-LK		
Q507	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L		
Q509	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q511	8-729-048-07	TRANSISTOR 2SD2578-CA		
Q600	8-729-139-96	TRANSISTOR 2SC2785TP-HFE		
Q601	8-729-023-22	TRANSISTOR 2SD2114KT146		
Q602	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q603	8-729-424-11	TRANSISTOR UN2111-TX		
Q604	8-729-208-12	TRANSISTOR 2SA1091R-TPE2		
Q605	8-729-044-30	TRANSISTOR 2SK2845-LB102		
Q606	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
Q607	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW		
Q608	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L		
		<RESISTOR>		
R001	1-414-233-22	INDUCTOR CHIP	0UH	
R002	1-216-025-61	RES-CHIP	100 5% 1/10W	
R003	1-216-073-61	RES-CHIP	10G 5% 1/10W	
R004	1-216-025-61	RES-CHIP	100 5% 1/10W	
R005	1-216-025-61	RES-CHIP	100 5% 1/10W	
R008	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	
R010	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	
R011	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	
R012	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	
R013	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	
R014	1-216-025-61	RES-CHIP	100 5% 1/10W	
R015	1-216-025-61	RES-CHIP	100 5% 1/10W	
R018	1-216-033-61	RES-CHIP	220 5% 1/10W	
R019	1-216-073-61	RES-CHIP	10G 5% 1/10W	
R021	1-216-073-61	RES-CHIP	10G 5% 1/10W	
R022	1-216-025-61	RES-CHIP	100 5% 1/10W	
R023	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R024	1-216-063-61	RES-CHIP	3.9K 5% 1/10W	
R025	1-216-063-61	RES-CHIP	3.9K 5% 1/10W	
R026	1-216-063-61	RES-CHIP	3.9K 5% 1/10W	
R027	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R029	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R031	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R032	1-216-025-61	RES-CHIP	100 5% 1/10W	
R034	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R035	1-216-025-61	RES-CHIP	100 5% 1/10W	
R036	1-216-025-61	RES-CHIP	100 5% 1/10W	
R037	1-216-025-61	RES-CHIP	100 5% 1/10W	
R038	1-216-049-61	RES-CHIP	1K 5% 1/10W	
R040	1-216-025-61	RES-CHIP	100 5% 1/10W	
R041	1-216-025-61	RES-CHIP	100 5% 1/10W	
R042	1-216-295-61	SHORT CHIP	0	
R043	1-216-049-61	RES-CHIP	1K 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION			REMARK
R044	1-216-025-61	RES-CHIP	100	5%	1/10W
R045	1-414-233-22	INDUCTOR CHIP	0UH		
R046	1-216-049-61	RES-CHIP	1K	5%	1/10W
R047	1-414-233-22	INDUCTOR CHIP	0UH		
R048	1-216-073-61	RES-CHIP	10G	5%	1/10W
R049	1-216-073-61	RES-CHIP	10G	5%	1/10W
R050	1-216-073-61	RES-CHIP	10G	5%	1/10W
R052	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R053	1-216-049-61	RES-CHIP	1K	5%	1/10W
R054	1-216-049-61	RES-CHIP	1K	5%	1/10W
R055	1-216-073-61	RES-CHIP	10G	5%	1/10W
R056	1-216-073-61	RES-CHIP	10G	5%	1/10W
R061	1-216-295-61	SHORT CHIP	0		
R062	1-216-041-61	RES-CHIP	470	5%	1/10W
R063	1-216-041-61	RES-CHIP	470	5%	1/10W
R064	1-216-041-61	RES-CHIP	470	5%	1/10W
R065	1-216-041-61	RES-CHIP	470	5%	1/10W
R066	1-216-049-61	RES-CHIP	1K	5%	1/10W
R067	1-216-049-61	RES-CHIP	1K	5%	1/10W
R105	1-216-295-61	SHORT CHIP	0		
R109	1-216-041-61	RES-CHIP	470	5%	1/10W
R111	1-216-025-61	RES-CHIP	100	5%	1/10W
R112	1-216-025-61	RES-CHIP	100	5%	1/10W
R113	1-216-025-61	RES-CHIP	100	5%	1/10W
R225	1-216-033-61	RES-CHIP	220	5%	1/10W
R226	1-216-033-61	RES-CHIP	220	5%	1/10W
R227	1-216-033-61	RES-CHIP	220	5%	1/10W
R237	1-216-295-61	SHORT CHIP	0		
R301	1-216-113-61	RES-CHIP	470K	5%	1/10W
R302	1-216-295-61	SHORT CHIP	0		
R303	1-216-049-61	RES-CHIP	1K	5%	1/10W
R304	1-216-073-61	RES-CHIP	10G	5%	1/10W
R306	1-216-085-00	METAL CHIP	33K	5%	1/10W
R308	1-216-025-61	RES-CHIP	100	5%	1/10W
R309	1-216-025-61	RES-CHIP	100	5%	1/10W
R310	1-216-025-61	RES-CHIP	100	5%	1/10W
R311	1-216-017-61	RES-CHIP	47	5%	1/10W
R312	1-216-041-61	RES-CHIP	470	5%	1/10W
R313	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R314	1-216-043-61	RES-CHIP	560	5%	1/10W
R316	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R317	1-216-077-61	RES-CHIP	15K		(2012)
R318	1-216-051-61	RES-CHIP	1.2K	5%	1/10W
R319	1-216-025-61	RES-CHIP	100	5%	1/10W
R320	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R321	1-216-073-61	RES-CHIP	10G	5%	1/10W
R322	1-216-033-61	RES-CHIP	220	5%	1/10W
R326	1-216-029-61	RES-CHIP	150	5%	1/10W
R327	1-216-033-61	RES-CHIP	220	5%	1/10W
R331	1-216-295-61	SHORT CHIP	0		
R332	1-216-033-61	RES-CHIP	220	5%	1/10W
R333	1-216-083-61	RES-CHIP	27K	5%	1/10W
R334	1-216-125-00	METAL CHIP	1.5M	5%	1/10W
R335	1-216-045-00	METAL CHIP	680	5%	1/10W
R338	1-216-037-61	RES-CHIP	330	5%	1/10W
R339	1-216-033-61	RES-CHIP	220	5%	1/10W
R340	1-216-025-61	RES-CHIP	100	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R345	1-216-081-61	RES-CHIP	22K	5%	1/10W
R346	1-216-051-61	RES-CHIP	1.2K	5%	1/10W
R347	1-216-051-61	RES-CHIP	1.2K	5%	1/10W
R348	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R349	1-216-073-61	RES-CHIP	10G	5%	1/10W
R350	1-216-061-61	RES-CHIP	3.3G	5%	1/10W
R351	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R354	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R355	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R356	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R357	1-216-079-00	METAL CHIP	18K	5%	1/10W
R358	1-216-049-61	RES-CHIP	1K	5%	1/10W
R359	1-216-033-61	RES-CHIP	220	5%	1/10W
R360	1-216-033-61	RES-CHIP	220	5%	1/10W
R361	1-216-073-61	RES-CHIP	10G	5%	1/10W
R362	1-216-075-61	RES-CHIP	12K	5%	1/10W
R363	1-216-079-00	METAL CHIP	18K	5%	1/10W
R364	1-216-295-61	SHORT CHIP	0		
R365	1-216-033-61	RES-CHIP	220	5%	1/10W
R366	1-216-073-61	RES-CHIP	10G	5%	1/10W
R367	1-216-073-61	RES-CHIP	10G	5%	1/10W
R368	1-216-073-61	RES-CHIP	10G	5%	1/10W
R370	1-216-033-61	RES-CHIP	220	5%	1/10W
R373	1-216-025-61	RES-CHIP	100	5%	1/10W
R376	1-216-081-61	RES-CHIP	22K	5%	1/10W
R377	1-216-121-61	RES-CHIP	1M	5%	1/10W
R378	1-216-031-61	RES-CHIP	180	5%	1/10W
R500	1-220-958-91	RES, METAL FILM	1K		
R501	1-216-049-61	RES-CHIP	1K	5%	1/10W
R505	1-216-105-61	METAL CHIP	220K	5%	1/10W
R506	1-216-089-61	RES-CHIP	47K		(2012)
R507	1-249-389-11	CARBON	4.7	5%	1/4W
R508	1-216-473-11	METAL OXIDE	56	5%	3W
R509	1-215-910-00	METAL OXIDE	68	5%	3W
R510	1-215-884-11	METAL OXIDE	47	5%	2W
R511	1-215-910-00	METAL OXIDE	68	5%	3W
R515	1-215-913-11	METAL OXIDE	220	5%	3W
R516	1-216-081-61	RES-CHIP	22K	5%	1/10W
R518	1-220-948-91	METAL	100	5%	1/2W
R519	1-215-912-11	METAL OXIDE	150	5%	3W
R520	1-215-445-00	METAL	10K	1%	1/4W
R522	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R523	1-220-952-91	METAL MELF	330	5%	1/2W
R525	1-208-854-11	METAL CHIP	1M	0.5%	1/10W
R526	1-208-804-11	METAL CHIP	8.2K	0.5%	1/10W
R527	1-216-001-61	RES-CHIP	10	5%	1/10W
R528	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R529	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R531	1-220-963-91	METAL MELF	3.3K	5%	1/2W
R533	1-220-958-91	RES, METAL FILM	1K		
R534	1-216-361-00	METAL OXIDE	0.22	5%	2W
R535	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R536	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R537	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R540	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R541	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R542	1-216-295-61	SHORT CHIP	0		

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION			REMARK
R543	1-249-426-11	CARBON	5.6K	5%	1/4W
R544	1-215-917-11	METAL OXIDE	1K	5%	3W
R545	1-216-077-61	RES-CHIP	15K		(2012)
R546	1-216-077-61	RES-CHIP	15K		(2012)
R547	1-216-085-00	METAL CHIP	33K	5%	1/10W
R549	1-215-453-00	METAL	22K	1%	1/4W
R550	1-216-097-61	RES-CHIP	100K	5%	1/10W
R551	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
R552	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R553	1-215-453-00	METAL	22K	1%	1/4W
R554	1-215-457-00	METAL	33K	1%	1/4W
R556	1-215-437-00	METAL	4.7K	1%	1/4W
R558	1-220-963-91	METAL MELF	3.3K	5%	1/2W
R559	1-220-969-91	METAL CHIP	10K	5%	1/2W
R560	1-216-073-61	RES-CHIP	10G	5%	1/10W
R562	1-249-401-11	CARBON	47	5%	1/4W
R565	1-216-073-61	RES-CHIP	10G	5%	1/10W
R567	1-216-105-61	METAL CHIP	220K	5%	1/10W
R568	1-249-383-11	CARBON	1.5	5%	1/4W
R570	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R571	1-215-443-00	METAL	8.2K	1%	1/4W
R573	1-216-089-61	RES, CHIP 47K		(2012)	
R577	1-215-913-11	METAL OXIDE	220	5%	3W
R578	1-216-369-00	METAL OXIDE	1	5%	2W
R579	1-216-097-61	RES-CHIP	100K	5%	1/10W
R580	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R581	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R582	1-216-113-61	RES-CHIP	470K	5%	1/10W
R584	1-216-081-61	RES-CHIP	22K	5%	1/10W
R587	1-216-097-61	RES-CHIP	100K	5%	1/10W
R588	1-215-888-00	METAL OXIDE	220	5%	2W
R589	1-215-888-00	METAL OXIDE	220	5%	2W
R590	1-215-465-00	METAL	68K	1%	1/4W
R591	1-260-288-11	CARBON	0.47	5%	1/2W
R593	1-260-288-11	CARBON	0.47	5%	1/2W
R594	1-260-288-11	CARBON	0.47	5%	1/2W
R596	1-215-917-11	METAL OXIDE	1K	5%	3W
R597	1-247-750-11	CARBON	680	5%	1/2W
R598	1-220-976-91	METAL MELF	56K	5%	1/2W
R599	1-249-389-11	CARBON	4.7	5%	1/4W
R600	1-220-976-91	METAL MELF	56K	5%	1/2W
R601	1-249-420-11	CARBON	1.8K	5%	1/4W
R602	1-249-389-11	CARBON	4.7	5%	1/4W
R603	1-215-485-00	METAL	470K	1%	1/4W
R604	1-216-097-61	RES-CHIP	100K	5%	1/10W
R607	1-220-965-91	METAL CHIP	4.7K	5%	1/2W
R608	1-240-205-91	CARBON	22M	5%	1/2W
R609	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R610	1-216-073-61	RES-CHIP	10G	5%	1/10W
R611	1-216-089-61	RES-CHIP	47K		(2012)
R612	1-216-045-00	METAL CHIP	680	5%	1/10W
R614	1-216-041-61	RES-CHIP	470	5%	1/10W
R615	1-216-369-00	METAL OXIDE	1	5%	2W
R616	1-260-302-51	CARBON	6.8	5%	1/2W
R617	1-247-791-91	CARBON	22	5%	1/4W
R619	1-260-128-11	CARBON	270K	5%	1/2W
R621	1-215-864-00	METAL OXIDE	150	5%	1W
R623	1-216-095-61	RES-CHIP	82K	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R624	1-216-089-61	RES-CHIP	47K		(2012)
R626	1-216-049-61	RES-CHIP	1K	5%	1/10W
R627	1-240-251-11	CMT-MELF	6.8	5%	10W
R629	1-247-747-11	CARBON	470	5%	1/2W
R630	1-249-429-11	CARBON	10K	5%	1/4W
R631	1-216-089-61	RES, CHIP 47K		(2012)	
R632	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R634 ⚠	1-218-265-11	METAL	8.2M	5%	1W
R635	1-216-492-11	METAL OXIDE	82K	5%	3W
R636	1-215-924-00	METAL OXIDE	15K	5%	3W
R637	1-216-492-11	METAL OXIDE	82K	5%	3W
R639	1-216-361-21	METAL OXIDE	0.22	5%	2W
R640	1-220-956-91	METAL MELF	680	5%	1/2W
R641	1-216-361-21	METAL OXIDE	0.22	5%	2W
R642	1-220-959-91	METAL MELF	1.5K	5%	1/2W
R643	1-220-963-91	METAL MELF	3.3K	5%	1/2W
R644	1-220-959-91	METAL MELF	1.5K	5%	1/2W
R646	1-215-924-00	METAL OXIDE	15K	5%	3W
R647	1-249-387-11	CARBON	3.3	5%	1/4W
R648	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R649	1-220-958-91	RES, METAL FILM 1K			
R650	1-215-882-00	METAL OXIDE	22	5%	2W
R652	1-215-900-11	METAL OXIDE	22K	5%	2W
R653	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R654	1-216-369-00	METAL OXIDE	1	5%	2W
R656	1-220-958-91	RES, METAL FILM 1K			
R657	1-260-127-11	CARBON	220K	5%	1/2W
R659	1-216-049-61	RES-CHIP	1K	5%	1/10W
R660	1-216-073-61	RES-CHIP	10G	5%	1/10W
R661	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R909	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R910	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
		<RELAY>			
RY600 ⚠	1-755-214-11	RELAY, AC POWER			
RY601 ⚠	1-755-214-11	RELAY, AC POWER			
		<SWITCH>			
S501	1-572-707-11	SWITCH, LEVER			
S502	1-572-707-11	SWITCH, LEVER			
		<TRANSFORMER>			
T501	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE			
T503 ⚠	1-453-284-11	TRANSFORMER ASSY FLYBACK (NX-4009//M3I4)			
T504	1-431-475-11	TRANSFORMER, HORIZONTAL LINEAR			
T505	1-426-981-11	TRANSFORMER, FERRITE (PMT)			
T601	1-424-505-11	TRANSFORMER, LINE FILTER			
T603 ⚠	1-431-946-11	TRANSFORMER, CONVERTER			
T604 ⚠	1-431-852-11	TRANSFORMER, CONVERTER (SRT)			
		<THERMISTOR>			
THP600	1-809-827-11	THERMISTOR, POSITIVE			

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REF.NO.	PART NO.	DESCRIPTION			REMARK
		<TUNER>			
TU101	8-598-449-10	TUNER, FSS BTF-LG433			
		<CRYSTAL>			
X001	1-781-174-21	VIBRATOR, CERAMIC			
X301	1-781-134-21	VIBRATOR, CRYSTAL			
X302	1-781-132-21	VIBRATOR, CRYSTAL			
**********					
*	A-1131-417-A	B2 BOARD MOUNTED			
		**********			
		<CONNECTOR>			
CN2302	* 1-766-952-11	CONNECTOR, BOARD TO BOARD 11P			
**********					
*	A-1136-131-A	B3 BOARD COMPLETE			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C1402	1-104-664-11	ELECT	47UF	20.00%	25V
C1404	1-216-295-61	SHORT CHIP	0		
C1405	1-104-664-11	ELECT	47UF	20.00%	25V
C1410	1-104-664-11	ELECT	47UF	20.00%	25V
C1411	1-216-295-61	SHORT CHIP	0		
C1413	1-126-935-11	ELECT	470UF	20.00%	16V
C1414	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1415	1-104-664-11	ELECT	47UF	20.00%	25V
C1416	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1418	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C1422	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1423	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1425	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1426	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1428	1-104-665-11	ELECT	100UF	20.00%	25V
C1429	1-104-663-11	ELECT	33UF	20.00%	25V
C1431	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C1433	1-104-664-11	ELECT	47UF	20.00%	16V
C1434	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1435	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C1436	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C1440	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1441	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1443	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1444	1-164-005-51	CERAMIC CHIP	470000PF	10%	25V
C1445	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1446	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1447	1-125-797-91	ELECT	10UF	20.00%	50V
C1448	1-164-005-51	CERAMIC CHIP	470000PF	10%	25V
C1449	1-126-933-11	ELECT	100UF	20.00%	16V
C1459	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1460	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C1461	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C1462	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C3201	1-125-797-91	ELECT	10UF	20.00%	50V
C3202	1-136-169-00	MYLAR	0.22UF	5.00%	50V
C3203	1-115-339-51	CERAMIC CHIP	0.1UF	10.00%	50V
C3206	1-164-232-11	CERAMIC CHIP	0.01UF	10.00%	50V
C3207	1-164-489-51	CERAMIC CHIP	0.22UF	10.00%	16V
C3208	1-164-489-51	CERAMIC CHIP	0.22UF	10.00%	16V
C3209	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3210	1-125-797-91	ELECT	10UF	20.00%	50V
C3211	1-125-797-91	ELECT	10UF	20.00%	50V
C3212	1-125-797-91	ELECT	10UF	20.00%	50V
C3213	1-104-664-11	ELECT	47UF	20.00%	25V
C3214	1-104-664-11	ELECT	47UF	20.00%	25V
C3215	1-117-720-51	CERAMIC CHIP	4.7UF		10V
C3216	1-117-720-51	CERAMIC CHIP	4.7UF		10V
C3217	1-164-232-11	CERAMIC CHIP	0.01UF	10.00%	50V
C3218	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3219	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3220	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3221	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3222	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3223	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3224	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3225	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C3226	1-125-797-91	ELECT	10UF	20.00%	50V
C3227	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3228	1-107-698-11	ELECT	10UF	20.00%	25V
C3229	1-107-698-11	ELECT	10UF	20.00%	25V
C3238	1-164-005-51	CERAMIC CHIP	470000PF	10%	25V
C3239	1-136-169-00	MYLAR	0.22UF	5.00%	50V
C3240	1-115-339-51	CERAMIC CHIP	0.1UF	10.00%	50V
C3243	1-163-989-51	CERAMIC CHIP	0.033UF	10.00%	25V
C3244	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C3245	1-164-005-51	CERAMIC CHIP	470000PF	10%	25V
C3246	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3247	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3248	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3249	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3250	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C3251	1-125-797-91	ELECT	10UF	20.00%	50V
C3252	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3253	1-126-933-11	ELECT	100UF	20.00%	16V
C3254	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3255	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3256	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3257	1-164-346-51	CERAMIC CHIP	1UF	10%	16V
C3258	1-163-989-51	CERAMIC CHIP	0.033UF	10.00%	25V
C3259	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3260	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3262	1-104-664-11	ELECT	47UF	20.00%	16V
C3264	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3265	1-125-797-91	ELECT	10UF	20.00%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C3266	1-125-797-91	ELECT	10UF	20.00%	50V
C3268	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3269	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3270	1-164-690-51	CERAMIC CHIP	0.0022UF	5.00%	50V
C3271	1-164-690-51	CERAMIC CHIP	0.0022UF	5.00%	50V
C3272	1-126-965-11	ELECT	22UF	20.00%	50V
C3273	1-115-339-51	CERAMIC CHIP	0.1UF	10.00%	50V
C3274	1-125-797-91	ELECT	10UF	20.00%	50V
C3276	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3277	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3278	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3279	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C3280	1-115-419-11	CERAMIC CHIP	3300PF	5.00%	25V
C3281	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3282	1-125-797-91	ELECT	10UF	20.00%	50V
C3283	1-125-797-91	ELECT	10UF	20.00%	50V
C3284	1-115-339-51	CERAMIC CHIP	0.1UF	10.00%	50V
C3285	1-125-797-91	ELECT	10UF	20.00%	50V
C3286	1-125-797-91	ELECT	10UF	20.00%	50V
C3287	1-125-797-91	ELECT	10UF	20.00%	50V
C3288	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3289	1-115-419-11	CERAMIC CHIP	3300PF	5.00%	25V
C3290	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3291	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6200	1-216-295-61	SHORT CHIP	0		
C6202	1-126-953-11	ELECT	2200UF	20.00%	35V
C6203	1-164-232-11	CERAMIC CHIP	0.01UF	10.00%	50V
C6204	1-128-550-11	ELECT	2200UF	20.00%	50V
C6205	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6206	1-128-550-11	ELECT	2200UF	20.00%	50V
C6209	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6210	1-126-924-11	ELECT	330UF	20.00%	10V
C6211	1-126-924-11	ELECT	330UF	20.00%	10V
C6212	1-104-664-11	ELECT	47UF	20.00%	25V
C6213	1-125-797-91	ELECT	10UF	20.00%	50V
C6217	1-164-004-51	CERAMIC CHIP	0.1UF	10.00%	25V
C6220	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6222	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6223	1-125-799-91	ELECT	1UF	20.00%	63V
C6241	1-125-797-91	ELECT	10UF	20.00%	50V
C6244	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C6245	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C6249	1-216-295-61	SHORT CHIP	0		
		<CONNECTOR>			
CN1400 *	1-564-512-11	PLUG, CONNECTOR 9P			
CN1401 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P			
CN1403 *	1-564-506-11	PLUG, CONNECTOR 3P			
CN1405 *	1-779-892-11	CONNECTOR, BOARD TO BOARD 10P			
CN1407 *	1-779-891-11	CONNECTOR, BOARD TO BOARD 8P			
CN6200 *	1-564-507-11	PLUG, CONNECTOR 4P			
CN6204 *	1-564-509-11	PLUG, CONNECTOR 6P			
CN6206 *	1-564-508-11	PLUG, CONNECTOR 5P			

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D1401	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1402	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1403	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1404	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1405	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1406	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1407	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1408	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1409	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1410	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1411	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1412	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1415	8-719-069-60	DIODE UDZS-TE17-9.1B	
D1416	8-719-069-60	DIODE UDZS-TE17-9.1B	
D3201	8-719-988-61	DIODE 1SS355TE-17	
D3203	8-719-988-61	DIODE 1SS355TE-17	
D6211	8-719-404-50	DIODE MA111-TX	
D6212	8-719-404-50	DIODE MA111-TX	
		<IC>	
IC1401	8-752-068-46	IC CXA1855S	
IC1404	8-759-701-59	IC L7809CV	
IC3200	8-759-103-37	IC UPC4558G2-T2	
IC3201	8-759-553-44	IC NJM2187L	
IC3202	8-759-100-96	IC UPC4558G2-T2	
IC3203	8-759-711-10	IC NJU4066BM-T2	
IC3204	8-759-100-96	IC NJM4558M-TE2	
IC3205	8-752-057-18	IC CXA1315P	
IC3206	8-759-496-02	IC NJM2150D	
IC3207	8-759-273-12	IC TDA7315D013TR	
IC6200	8-759-168-24	IC TA8200AH	
		<JACK>	
J1401	1-784-646-11	TERMINAL, S	
J1402	1-778-388-11	JACK BLOCK, PIN 9P	
		<CHIP CONDUCTOR>	
JR1405	1-216-295-61	SHORT CHIP 0	
JR1406	1-216-295-61	SHORT CHIP 0	
JR1407	1-216-295-61	SHORT CHIP 0	
JR1408	1-216-295-61	SHORT CHIP 0	
JR3200	1-216-295-61	SHORT CHIP 0	
JR3201	1-216-295-61	SHORT CHIP 0	
JR3202	1-216-295-61	SHORT CHIP 0	
JR3203	1-216-295-61	SHORT CHIP 0	
JR3204	1-216-295-61	SHORT CHIP 0	
JR3207	1-216-295-61	SHORT CHIP 0	
JR3208	1-216-295-61	SHORT CHIP 0	
JR3209	1-216-295-61	SHORT CHIP 0	
JR6200	1-216-295-61	SHORT CHIP 0	
JR6202	1-216-295-61	SHORT CHIP 0	
JR6203	1-216-295-61	SHORT CHIP 0	

B3

REF.NO.	PART NO.	DESCRIPTION			REMARK
JR6204	1-216-295-61	SHORT CHIP	0		
		<COIL>			
L1404	1-412-537-31	INDUCTOR	100UH		
L3202	1-414-856-11	INDUCTOR	10UH		
		<TRANSISTOR>			
Q1402	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L			
Q1403	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L			
Q1404	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L			
Q3201	8-729-224-62	TRANSISTOR 2SK246GR-TPE2			
Q3202	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L			
Q3203	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L			
Q3204	8-729-224-62	TRANSISTOR 2SK246GR-TPE2			
Q6201	8-729-421-17	TRANSISTOR UN2213-TX			
Q6203	8-729-421-17	TRANSISTOR UN2213-TX			
Q6204	8-729-421-17	TRANSISTOR UN2213-TX			
Q6208	8-729-421-17	TRANSISTOR UN2213-TX			
		<RESISTOR>			
R1403	1-216-033-61	RES-CHIP	220	5%	1/10W
R1404	1-216-295-61	SHORT CHIP	0		
R1406	1-216-017-61	RES-CHIP	47	5%	1/10W
R1407	1-216-033-61	RES-CHIP	220	5%	1/10W
R1408	1-216-031-61	RES-CHIP	180	5%	1/10W
R1409	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1410	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1411	1-216-295-61	SHORT CHIP	0		
R1412	1-216-295-61	SHORT CHIP	0		
R1414	1-216-025-61	RES-CHIP	100	5%	1/10W
R1417	1-216-025-61	RES-CHIP	100	5%	1/10W
R1418	1-216-025-61	RES-CHIP	100	5%	1/10W
R1426	1-216-025-61	RES-CHIP	100	5%	1/10W
R1428	1-216-025-61	RES-CHIP	100	5%	1/10W
R1429	1-216-295-61	SHORT CHIP	0		
R1430	1-216-025-61	RES-CHIP	100	5%	1/10W
R1403	1-216-033-61	RES-CHIP	220	5%	1/10W
R1404	1-216-295-61	SHORT CHIP	0		
R1406	1-216-017-61	RES-CHIP	47	5%	1/10W
R1407	1-216-033-61	RES-CHIP	220	5%	1/10W
R1408	1-216-031-61	RES-CHIP	180	5%	1/10W
R1409	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1410	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1411	1-216-295-61	SHORT CHIP	0		
R1412	1-216-295-61	SHORT CHIP	0		
R1414	1-216-025-61	RES-CHIP	100	5%	1/10W
R1417	1-216-025-61	RES-CHIP	100	5%	1/10W
R1418	1-216-025-61	RES-CHIP	100	5%	1/10W
R1426	1-216-025-61	RES-CHIP	100	5%	1/10W
R1428	1-216-025-61	RES-CHIP	100	5%	1/10W
R1429	1-216-295-61	SHORT CHIP	0		
R1430	1-216-025-61	RES-CHIP	100	5%	1/10W
R1431	1-216-025-61	RES-CHIP	100	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1433	1-216-025-61	RES-CHIP	100	5%	1/10W
R1435	1-216-022-00	METAL CHIP	75	5%	1/10W
R1436	1-216-025-61	RES-CHIP	100	5%	1/10W
R1437	1-216-022-00	METAL CHIP	75	5%	1/10W
R1438	1-216-025-61	RES-CHIP	100	5%	1/10W
R1441	1-216-025-61	RES-CHIP	100	5%	1/10W
R1442	1-216-049-61	RES-CHIP	1K	5%	1/10W
R1443	1-216-049-61	RES-CHIP	1K	5%	1/10W
R1445	1-216-025-61	RES-CHIP	100	5%	1/10W
R1446	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1447	1-216-025-61	RES-CHIP	100	5%	1/10W
R1449	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1450	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1451	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1452	1-216-295-61	SHORT CHIP	0		
R1453	1-216-025-61	RES-CHIP	100	5%	1/10W
R1455	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1456	1-216-113-61	RES-CHIP	470K	5%	1/10W
R1457	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1458	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1459	1-216-025-61	RES-CHIP	100	5%	1/10W
R1460	1-216-033-61	RES-CHIP	220	5%	1/10W
R1461	1-216-025-61	RES-CHIP	100	5%	1/10W
R1463	1-216-073-61	RES-CHIP	10G	5%	1/10W
R1464	1-216-113-61	RES-CHIP	470K	5%	1/10W
R1465	1-216-113-61	RES-CHIP	470K	5%	1/10W
R1466	1-216-033-61	RES-CHIP	220	5%	1/10W
R1467	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R1468	1-216-093-11	METAL CHIP	68K	5%	1/10W
R1469	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1470	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1471	1-216-022-00	METAL CHIP	75	5%	1/10W
R1472	1-216-033-61	RES-CHIP	220	5%	1/10W
R1473	1-216-033-61	RES-CHIP	220	5%	1/10W
R1477	1-216-047-00	METAL CHIP	820	5%	1/10W
R1478	1-216-051-61	RES-CHIP	1.2K	5%	1/10W
R1479	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1480	1-216-105-61	METAL CHIP	220K	5%	1/10W
R1481	1-216-022-00	METAL CHIP	75	5%	1/10W
R1482	1-216-025-61	RES-CHIP	100	5%	1/10W
R1483	1-216-025-61	RES-CHIP	100	5%	1/10W
R1484	1-216-025-61	RES-CHIP	100	5%	1/10W
R1485	1-216-025-61	RES-CHIP	100	5%	1/10W
R1486	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R1490	1-216-025-61	RES-CHIP	100	5%	1/10W
R1491	1-216-025-61	RES-CHIP	100	5%	1/10W
R1492	1-216-021-61	RES-CHIP	68	5%	1/10W
R1493	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R1496	1-216-041-61	RES-CHIP	470	5%	1/10W
R1497	1-216-041-61	RES-CHIP	470	5%	1/10W
R1498	1-216-025-61	RES-CHIP	100	5%	1/10W
R1499	1-216-025-61	RES-CHIP	100	5%	1/10W
R1500	1-216-025-61	RES-CHIP	100	5%	1/10W
R3200	1-216-121-61	RES-CHIP	1M	5%	1/10W
R3201	1-216-121-61	RES-CHIP	1M	5%	1/10W
R3202	1-216-097-61	RES-CHIP	100K	5%	1/10W
R3203	1-216-121-61	RES-CHIP	1M	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R3204	1-216-061-61	RES-CHIP	3.3G	5%	1/10W
R3205	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3206	1-216-039-61	RES-CHIP	390	5%	1/10W
R3207	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3208	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R3209	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3210	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R3211	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3212	1-216-049-61	RES-CHIP	1K	5%	1/10W
R3213	1-216-091-61	RES-CHIP	56K	5%	1/10W
R3214	1-216-295-61	SHORT CHIP	0		
R3215	1-216-295-61	SHORT CHIP	0		
R3216	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3217	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3218	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3219	1-216-077-61	RES, CHIP	15K		(2012)
R3220	1-216-097-61	RES-CHIP	100K	5%	1/10W
R3221	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3222	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3223	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3224	1-216-115-00	METAL CHIP	560K	5%	1/10W
R3225	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3226	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3227	1-216-129-61	METAL CHIP	2.2M	5%	1/10W
R3228	1-216-085-00	METAL CHIP	33K	5%	1/10W
R3229	1-216-095-61	RES-CHIP	82K	5%	1/10W
R3230	1-216-055-61	RES-CHIP	1.8K	5%	1/10W
R3231	1-216-091-61	RES-CHIP	56K	5%	1/10W
R3232	1-216-089-61	RES, CHIP	47K		(2012)
R3233	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3234	1-216-039-61	RES-CHIP	390	5%	1/10W
R3235	1-216-101-61	RES-CHIP	150K	5%	1/10W
R3236	1-216-113-61	RES-CHIP	470K	5%	1/10W
R3237	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3238	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3239	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3240	1-216-081-61	RES-CHIP	22K	5%	1/10W
R3241	1-216-093-11	METAL CHIP	68K	5%	1/10W
R3242	1-216-081-61	RES-CHIP	22K	5%	1/10W
R3243	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3244	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3245	1-216-097-61	RES-CHIP	100K	5%	1/10W
R3246	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3247	1-216-101-61	RES-CHIP	150K	5%	1/10W
R3248	1-216-081-61	RES-CHIP	22K	5%	1/10W
R3249	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3250	1-216-049-61	RES-CHIP	1K	5%	1/10W
R3251	1-216-101-61	RES-CHIP	150K	5%	1/10W
R3252	1-216-113-61	RES-CHIP	470K	5%	1/10W
R3253	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3254	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3255	1-216-121-61	RES-CHIP	1M	5%	1/10W
R3256	1-216-121-61	RES-CHIP	1M	5%	1/10W
R3257	1-216-097-61	RES-CHIP	100K	5%	1/10W
R3258	1-216-121-61	RES-CHIP	1M	5%	1/10W
R3259	1-216-061-61	RES-CHIP	3.3G	5%	1/10W
R3260	1-216-025-61	RES-CHIP	100	5%	1/10W
R3261	1-216-025-61	RES-CHIP	100	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R3262	1-216-115-00	METAL CHIP	560K	5%	1/10W
R3263	1-216-093-11	METAL CHIP	68K	5%	1/10W
R3264	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R3266	1-216-295-61	SHORT CHIP	0		
R3267	1-216-049-61	RES-CHIP	1K	5%	1/10W
R3268	1-216-049-61	RES-CHIP	1K	5%	1/10W
R3269	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R3270	1-216-295-61	SHORT CHIP	0		
R3271	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3272	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3273	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R3274	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3277	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3278	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R3279	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R3280	1-216-033-61	RES-CHIP	220	5%	1/10W
R3281	1-216-033-61	RES-CHIP	220	5%	1/10W
R3282	1-216-079-00	METAL CHIP	18K	5%	1/10W
R3283	1-216-081-61	RES-CHIP	22K	5%	1/10W
R3284	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3285	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3286	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3287	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3288	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3289	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3290	1-216-081-61	RES-CHIP	22K	5%	1/10W
R3291	1-216-079-00	METAL CHIP	18K	5%	1/10W
R3294	1-216-073-61	RES-CHIP	10G	5%	1/10W
R3295	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3296	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R3297	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3298	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R3299	1-216-069-61	RES-CHIP	6.8K	5%	1/10W
R6201	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R6202	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R6203	1-216-295-61	SHORT CHIP	0		
R6209	1-216-049-61	RES-CHIP	1K	5%	1/10W
R6213	1-216-073-61	RES-CHIP	10G	5%	1/10W
R6214	1-216-073-61	RES-CHIP	10G	5%	1/10W
R6219	1-216-089-61	RES, CHIP	47K		(2012)
R6245	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R6246	1-216-053-61	RES-CHIP	1.5K	5%	1/10W
R6254	1-216-013-61	METAL CHIP	33	5%	1/10W
R6255	1-216-308-61	METAL CHIP	4.7	5%	1/10W
R6258	1-216-013-61	METAL CHIP	33	5%	1/10W
R6259	1-216-308-61	METAL CHIP	4.7	5%	1/10W
R6278	1-216-295-61	SHORT CHIP	0		

****

C

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.		PART NO.	DESCRIPTION			REMARK
	*	A-1331-911-A	C BOARD MOUNTED **********			
		4-382-854-11	SCREW (M3X10), P, SW (+)			
			<CAPACITOR>			
C700		1-110-389-11	FILM MELF	0.1UF	5% 250V	
C701		1-162-114-00	CERAMIC	0.0047UF	2KV	
C702		1-102-074-00	CERAMIC	0.001UF	10.00% 50V	
C707		1-137-399-11	MYLAR	0.1UF	5.00% 50V	
C708		1-102-228-00	CERAMIC	470PF	10.00% 500V	
C709		1-102-228-00	CERAMIC	470PF	10.00% 500V	
C710		1-102-960-00	CERAMIC	24PF	5.00% 50V	
C711		1-102-852-91	CERAMIC	47PF	5.00% 50V	
C712		1-102-525-11	CERAMIC	68PF	5.00% 50V	
C713		1-102-228-00	CERAMIC	470PF	10.00% 500V	
C716		1-128-526-11	ELECT	100UF	20.00% 25V	
C717		1-107-651-11	ELECT	4.7UF	20.00% 250V	
C726		1-104-664-11	ELECT	47UF	20.00% 25V	
C1800		1-126-964-11	ELECT	10UF	20.00% 50V	
C1803		1-126-964-11	ELECT	10UF	20.00% 50V	
C1804		1-126-964-11	ELECT	10UF	20.00% 50V	
C1809		1-126-942-61	ELECT	1000UF	20.00% 25V	
			<CONNECTOR>			
CN700		1-695-915-11	TAB (CONTACT)			
CN701		1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
CN702		1-695-915-11	TAB (CONTACT)			
CN703	*	1-564-509-11	PLUG, CONNECTOR 6P			
CN704		1-695-915-11	TAB (CONTACT)			
CN706		1-695-915-11	TAB (CONTACT)			
CN1801	*	1-564-509-11	PLUG, CONNECTOR 6P			
CN1802	*	1-564-506-11	PLUG, CONNECTOR 3P			
			<DIODE>			
D702		8-719-921-20	DIODE 1SS119-25TD			
D703		8-719-921-20	DIODE 1SS119-25TD			
D704		8-719-921-20	DIODE 1SS119-25TD			
D705		8-719-051-85	DIODE HSS83TD			
D706		8-719-051-85	DIODE HSS83TD			
D707		8-719-051-85	DIODE HSS83TD			
D708		8-719-921-20	DIODE 1SS119-25TD			
D709		8-719-921-20	DIODE 1SS119-25TD			
D710		8-719-921-20	DIODE 1SS119-25TD			
D711		8-719-110-23	DIODE RD11ES-T1B3			
D720		8-719-921-20	DIODE 1SS119-25TD			
D721		8-719-921-20	DIODE 1SS119-25TD			
D722		8-719-921-20	DIODE 1SS119-25TD			
D1803		8-719-921-20	DIODE 1SS119-25TD			
D1804		8-719-921-20	DIODE 1SS119-25TD			
D1808		8-719-908-03	DIODE GP08DPKG23			

REF.NO.		PART NO.	DESCRIPTION			REMARK
			<IC>			
IC701		8-759-561-28	IC STV5112			
IC1800		8-759-822-38	IC LA6510			
			<JACK>			
J701	⚠	1-540-071-22	SOCKET, CRT			
			<COIL>			
L701		1-410-667-31	INDUCTOR	22UH		
L705		1-414-186-31	INDUCTOR	33UH		
L706		1-414-186-31	INDUCTOR	33UH		
L707		1-414-186-31	INDUCTOR	33UH		
			<TRANSISTOR>			
Q1800		8-729-139-98	TRANSISTOR 2SA1175TP-HFE			
Q1802		8-729-119-96	TRANSISTOR 2SC2785TP-HFE			
			<RESISTOR>			
R700		1-249-393-11	CARBON	10	5% 1/4W	
R701		1-249-496-11	CARBON	100K	5% 1/2W	
R702		1-215-469-00	METAL	100K	1% 1/4W	
R703		1-215-414-00	METAL	510	1% 1/4W	
R704		1-215-414-00	METAL	510	1% 1/4W	
R705		1-240-297-91	METAL MELF	1.2K	5% 1/2W	
R706		1-240-297-91	METAL MELF	1.2K	5% 1/2W	
R707		1-215-414-00	METAL	510	1% 1/4W	
R708		1-240-297-91	METAL MELF	1.2K	5% 1/2W	
R709		1-215-903-11	METAL OXIDE	68K	5% 2W	
R711		1-215-903-11	METAL OXIDE	68K	5% 2W	
R712		1-215-903-11	METAL OXIDE	68K	5% 2W	
R713		1-215-467-00	METAL	82K	1% 1/4W	
R714		1-220-965-91	METAL CHIP	4.7K	5% 1/2W	
R715		1-220-954-91	METAL MELF	470	5% 1/2W	
R716		1-220-954-91	METAL MELF	470	5% 1/2W	
R717		1-220-965-91	METAL CHIP	4.7K	5% 1/2W	
R718		1-247-752-11	CARBON	1K	5% 1/2W	
R719		1-220-965-91	METAL CHIP	4.7K	5% 1/2W	
R722		1-247-752-11	CARBON	1K	5% 1/2W	
R723		1-220-954-91	METAL MELF	470	5% 1/2W	
R724		1-247-752-11	CARBON	1K	5% 1/2W	
R730		1-216-392-11	METAL OXIDE	1.8	5% 3W	
R734		1-247-739-11	CARBON	100	5% 1/2W	
R744		1-215-415-00	METAL	560	1% 1/4W	
R745		1-215-410-00	METAL	360	1% 1/4W	
R1800		1-220-958-91	RES, METAL FILM	1K		
R1801		1-220-966-91	METAL CHIP	5.6K	5% 1/2W	
R1802		1-249-382-11	CARBON	1.2	5% 1/4W	
R1803		1-249-382-11	CARBON	1.2	5% 1/4W	
R1805		1-220-969-91	METAL CHIP	10K	5% 1/2W	
R1806		1-220-965-91	METAL CHIP	4.7K	5% 1/2W	
R1808		1-220-965-91	METAL CHIP	4.7K	5% 1/2W	
R1809		1-220-974-91	METAL CHIP	33K	5% 1/2W	
R1810		1-220-974-91	METAL CHIP	33K	5% 1/2W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

C F H3

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1811	1-249-440-11	CARBON	82K	5% 1/4W	
R1812	1-220-974-91	METAL CHIP	33K	5% 1/2W	
R1821	1-249-440-11	CARBON	82K	5% 1/4W	
R1822	1-220-974-91	METAL CHIP	33K	5% 1/2W	
R1823	1-220-966-91	METAL CHIP	5.6K	5% 1/2W	
R1824	1-220-974-91	METAL CHIP	33K	5% 1/2W	
R1825	1-220-963-91	METAL MELF	3.3K	5% 1/2W	
		<VARIABLE RESISTOR>			
RV702	1-241-656-11	RES, ADJ, METAL FILM 110M			
RV1801	1-223-241-11	RES, ADJ, CARBON 47K			
		<SPARK GAP>			
SG701	1-519-422-11	GAP, SPARK			

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*	A-1241-361-A	F BOARD MOUNTED				
		**********				
	1-533-223-11	HOLDER, FUSE				
		<CAPACITOR>				
C654	⚠ 1-117-703-11	CERAMIC	0.0047UF	99%	250V	
C4601	⚠ 1-104-708-11	MYLAR	0.47UF	20.00%	250V	
C4602	⚠ 1-109-835-11	MYLAR	0.68UF	20.00%	250V	
		<CONNECTOR>				
CN4601	* 1-580-843-11	PIN, CONNECTOR (POWER)				
CN4602	* 1-580-843-11	PIN, CONNECTOR (POWER)				
CN4603	1-695-915-11	TAB (CONTACT)				
		<FUSE>				
F4601	⚠ 1-532-299-00	FUSE, TIME-LAG 5A/250V				
		<RESISTOR>				
R4601	⚠ 1-202-719-00	SOLID	1M	10%	1/2W	
		<TRANSFORMER>				
T4601	1-431-536-11	TRANSFORMER, LINE FILTER				
T4602	1-431-182-11	TRANSFORMER, LINE FILTER				
		<VARISTOR>				
VDR461	1-803-830-11	VARISTOR (ERZV14D621)				

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REF.NO.	PART NO.	DESCRIPTION			REMARK
*	A-1372-866-A	H3 BOARD MOUNTED			
		**********			
*	4-055-304-01	HOLDER, LED			
		<CAPACITOR>			
C3900	1-136-153-00	MYLAR	0.01UF	5.00% 50V	
C3902	1-136-153-00	MYLAR	0.01UF	5.00% 50V	
C3904	1-104-664-11	ELECT	47UF	20.00% 25V	
C3905	1-125-805-91	ELECT	4.7UF	20.00% 50V	
C3906	1-125-805-91	ELECT	4.7UF	20.00% 50V	
C3910	1-104-664-11	ELECT	47UF	20.00% 16V	
C3911	1-104-664-11	ELECT	47UF	20.00% 16V	
C3912	1-102-114-00	CERAMIC	470PF	10.00% 50V	
C3913	1-125-799-91	ELECT	1UF	20.00% 63V	
C3914	1-126-965-11	ELECT	22UF	20.00% 50V	
		<CONNECTOR>			
CN3601	* 1-580-844-11	PIN, CONNECTOR (POWER)			
CN3602	* 1-580-844-11	PIN, CONNECTOR (POWER)			
CN3603	1-695-915-11	TAB (CONTACT)			
CN3901	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN3902	* 1-564-509-11	PLUG, CONNECTOR 6P			
CN3904	* 1-564-512-11	PLUG, CONNECTOR 9P			
CN3905	* 1-564-512-11	PLUG, CONNECTOR 9P			
		<DIODE>			
D3900	8-719-070-16	DIODE NNCD9.1A-T1			
D3901	8-719-070-16	DIODE NNCD9.1A-T1			
D3902	8-719-070-16	DIODE NNCD9.1A-T1			
D3905	8-719-070-16	DIODE NNCD9.1A-T1			
D3906	8-719-045-19	DIODE SPB-26MVWF			
D3907	8-719-070-16	DIODE NNCD9.1A-T1			
D3908	8-719-070-16	DIODE NNCD9.1A-T1			
		<IC>			
IC3901	8-742-014-21	HYB IC SBX1981-51(21)			
		<JACK>			
J3901	1-750-264-11	JACK			
J3902	1-784-646-11	TERMINAL, S			
J3903	1-770-329-11	JACK, PIN 3P			
		<COIL>			
L3901	1-414-183-41	INDUCTOR	10UH		
L3902	1-414-183-41	INDUCTOR	10UH		
		<TRANSISTOR>			
Q3901	8-729-030-02	TRANSISTOR DTC144ESA-TP			
Q3902	8-729-030-02	TRANSISTOR DTC144ESA-TP			

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

H3 VM1

REF.NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R3900	1-220-952-91	METAL MELF	330	5%	1/2W
R3901	1-220-952-91	METAL MELF	330	5%	1/2W
R3902	1-247-804-11	CARBON	75	5%	1/4W
R3904	1-220-969-91	METAL CHIP	10K	5%	1/2W
R3905	1-220-969-91	METAL CHIP	10K	5%	1/2W
R3907	1-220-966-91	METAL CHIP	5.6K	5%	1/2W
R3908	1-220-954-91	METAL MELF	470	5%	1/2W
R3909	1-220-958-91	RES, METAL FILM	1K		
R3910	1-220-960-91	METAL MELF	1.8K	5%	1/2W
R3911	1-220-952-91	METAL MELF	330	5%	1/2W
R3912	1-220-963-91	METAL MELF	3.3K	5%	1/2W
R3913	1-220-969-91	METAL CHIP	10K	5%	1/2W
R3914	1-220-952-91	METAL MELF	330	5%	1/2W
R3915	1-220-969-91	METAL CHIP	10K	5%	1/2W
R3916	1-249-401-11	CARBON	47	5%	1/4W
R3917	1-247-804-11	CARBON	75	5%	1/4W
R3918	1-220-951-91	METAL	220	5%	1/2W
R3919	1-220-951-91	METAL	220	5%	1/2W
R3920	1-220-948-91	METAL	100	5%	1/2W
R3921	1-220-948-91	METAL	100	5%	1/2W
R3922	1-220-961-91	METAL CHIP	2.2K	5%	1/2W
R3923	1-220-951-91	METAL	220	5%	1/2W
R3924	1-247-804-11	CARBON	75	5%	1/4W
		<SWITCH>			
S3601 ⚠	1-571-433-21	SWITCH, PUSH (AC POWER)			
S3902	1-692-431-21	SWITCH, TACTILE			
S3903	1-692-431-21	SWITCH, TACTILE			
S3904	1-692-431-21	SWITCH, TACTILE			
S3905	1-692-431-21	SWITCH, TACTILE			
S3906	1-692-431-21	SWITCH, TACTILE			
S3907	1-692-431-21	SWITCH, TACTILE			
S3908	1-692-431-21	SWITCH, TACTILE			

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*	A-1342-476-A	VM1 BOARD MOUNTED			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C5902	1-104-661-91	ELECT	330UF	20.00%	16V
C5903	1-161-830-00	CERAMIC	0.0047UF		500V
C5905	1-126-925-11	ELECT	470UF	20.00%	10V
C5906	1-130-491-00	MYLAR	0.047UF	5.00%	50V
C5907	1-107-638-11	ELECT	33UF	20.00%	160V
C5908	1-106-383-00	MYLAR	0.047UF	10.00%	200V
C5909	1-126-933-11	ELECT	100UF	20.00%	16V
C5910	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5911	1-107-949-11	ELECT	2.2UF	20.00%	160V
C5912	1-104-999-11	MYLAR	0.1UF	10.00%	200V
C5913	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5914	1-126-933-11	ELECT	100UF	20.00%	16V
C5916	1-130-491-00	MYLAR	0.047UF	5.00%	50V
C5917	1-126-925-11	ELECT	470UF	20.00%	10V
C5918	1-115-341-51	CERAMIC	120PF	10.00%	500V
C5920	1-125-797-91	ELECT	10UF	20.00%	50V
C5921	1-102-852-91	CERAMIC	47PF	5.00%	50V
		<CONNECTOR>			
CN5901*	1-564-510-11	PLUG, CONNECTOR 7P			
CN5904*	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P			
		<DIODE>			
D5901	8-719-921-20	DIODE 1SS119-25TD			
D5902	8-719-110-88	DIODE MTZJ-T-77-39			
D5903	8-719-921-20	DIODE 1SS119-25TD			
D5904	8-719-110-88	DIODE MTZJ-T-77-39			
D5905	8-719-921-20	DIODE 1SS119-25TD			
D5906	1-249-406-11	CARBON	120	5%	1/4W
D5907	1-249-406-11	CARBON	120	5%	1/4W
		<COIL>			
L5901	1-414-187-11	INDUCTOR	47UH		
L5902	1-414-856-11	INDUCTOR	10UH		
		<TRANSISTOR>			
Q5901	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q5902	8-729-809-26	TRANSISTOR 2SA1606-E			
Q5903	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q5904	8-729-139-98	TRANSISTOR 2SA1175TP-HFE			
Q5905	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q5906	8-729-809-29	TRANSISTOR 2SC4159-E			
Q5908	8-729-139-96	TRANSISTOR 2SC2785TP-HFE			
Q5909	8-729-139-96	TRANSISTOR 2SC2785TP-HFE			
		<RESISTOR>			
R5901	1-220-951-91	METAL	220	5%	1/2W
R5902	1-249-414-11	CARBON	560	5%	1/4W
R5903	1-247-734-11	CARBON	39	5%	1/2W
R5904	1-220-952-91	METAL MELF	330	5%	1/2W
R5905	1-220-958-91	RES, METAL FILM	1K		
R5906	1-220-958-91	RES, METAL FILM	1K		
R5907	1-220-958-91	RES, METAL FILM	1K		
R5908	1-249-383-11	CARBON	1.5	5%	1/4W
R5909	1-220-951-91	METAL	220	5%	1/2W
R5910	1-220-946-81	METAL MELF	68	5%	1/2W
R5911	1-249-439-11	CARBON	68K	5%	1/4W
R5912	1-220-975-91	METAL MELF	47K	5%	1/2W
R5914	1-220-946-81	METAL MELF	68	5%	1/2W
R5915	1-220-969-91	METAL CHIP	10K	5%	1/2W
R5916	1-220-959-91	METAL MELF	1.5K	5%	1/2W
R5917	1-220-957-91	METAL MELF	820	5%	1/2W
R5918	1-220-969-91	METAL CHIP	10K	5%	1/2W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

VM1

REF.NO.	PART NO.	DESCRIPTION			REMARK
R5919	1-249-417-11	CARBON	1K	5%	1/4W
R5920	1-249-439-11	CARBON	68K	5%	1/4W
R5921	1-216-476-11	METAL OXIDE	180	5%	3W
R5922	1-220-955-91	METAL MELF	560	5%	1/2W
R5923	1-249-383-11	CARBON	1.5	5%	1/4W
R5925	1-249-400-11	CARBON	39	5%	1/4W
R5929	1-215-880-00	METAL OXIDE	10	5%	2W
R5930	1-220-954-91	METAL MELF	470	5%	1/2W
R5931	1-220-954-91	METAL MELF	470	5%	1/2W
R5932	1-220-954-91	METAL MELF	470	5%	1/2W
R5933	1-220-954-91	METAL MELF	470	5%	1/2W
R5934	1-220-970-91	METAL MELF	12K	5%	1/2W
R5935	1-220-969-91	METAL CHIP	10K	5%	1/2W

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MISCELLANEOUS
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⚠	1-403-619-81	COIL, DEMAGNETIZATION
⚠	1-451-475-11	DEFLECTION YOKE (Y25RSA)
	1-452-094-00	CIRCULAR DISC MAGNET B
	1-452-032-00	MAGNET,DISC
	1-452-896-61	COIL, NA ROTATION (RT-200)
	1-503-902-11	SPEAKER (15X6.5 CM)
	1-529-190-11	SPEAKER (5CM)
⚠	1-574-062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V
⚠	8-733-250-05	PICTURE TUBE (A60LPN70X)
	8-453-011-21	NA299-S

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REF.NO.	PART NO.	DESCRIPTION	REMARK

ACCESSORIES AND PACKING MATERIALS
****

	3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)
	3-865-956-11	MANUAL INSTRUCTION
*	4-065-594-01	BAG, PROTECTION
*	4-069-322-02	INDIVIDUAL CARTON
*	4-069-323-01	CUSHION (UPPER)(ASSY)
*	4-069-324-01	CUSHION (LOWER)(ASSY)
	4-392-003-31	BAND, HOLD
	4-392-004-21	CLIP

****

REMOTE COMMANDER
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1-418-038-11	REMOTE COMMANDER (RM-954)
9-933-895-01	BATTERY COVER, REMOTE COMMANDER

SONY

SERVICE MANUAL

BG-3S CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-XF21M30	RM-952	Australia	SCC-U23B-A
KV-XF21M50	RM-952	GE	SCC-U12K-A
KV-XF51M65	RM-952	Indonesia	SCC-U20H-A

SUPPLEMENT-1

SUBJECT : ADD ROTATION COIL CIRCUIT AND MICON CHANGE

File this supplement with the Service Manual.

The following parts change and addition apply to all models above except KV-XF21M50 with starting serial number:

KV-XF21M30 1,002,401 ~

KV-XF51M65 1,902,401 ~

SECTION 4. CIRCUIT ADJUSTMENTS

4-2. ADJUSTMENT METHOD

(see page 36)

No. OPB2 OP3

Item	Pic Rot	2199 Cune	Auto PIC	Auto TV sys	AV Mono	11 KEY	Color SW	HEX
KV-XF21M30	1	0	1	1	0	0	0	B0
KV-XF51M65	1	0	1	1	0	0	0	B0

4-4. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

(see page 37)

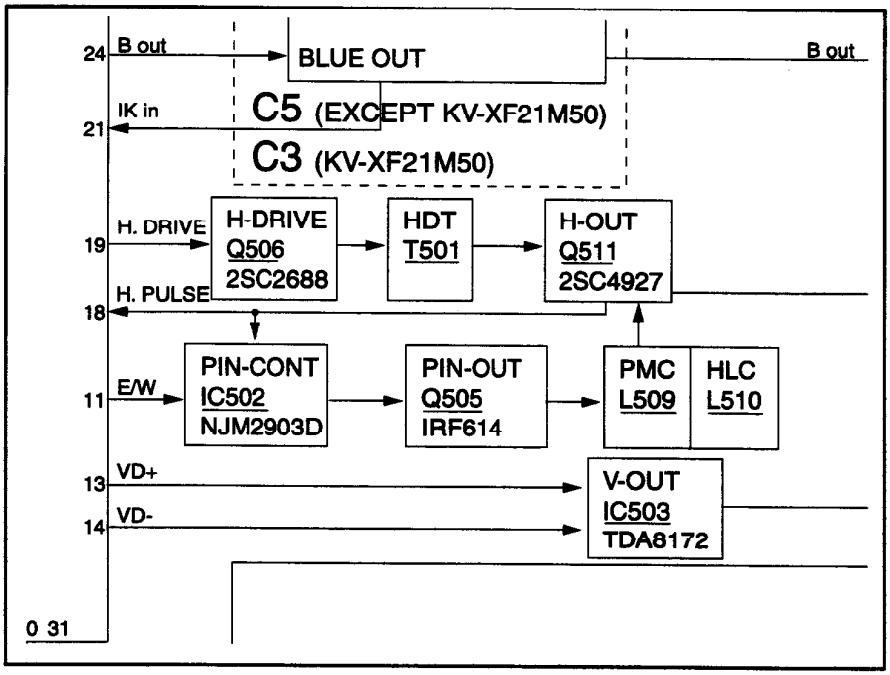
IC001 (μ-CON) : CXP86449-623S

MICROFILM

SECTION 5 DIAGRAM

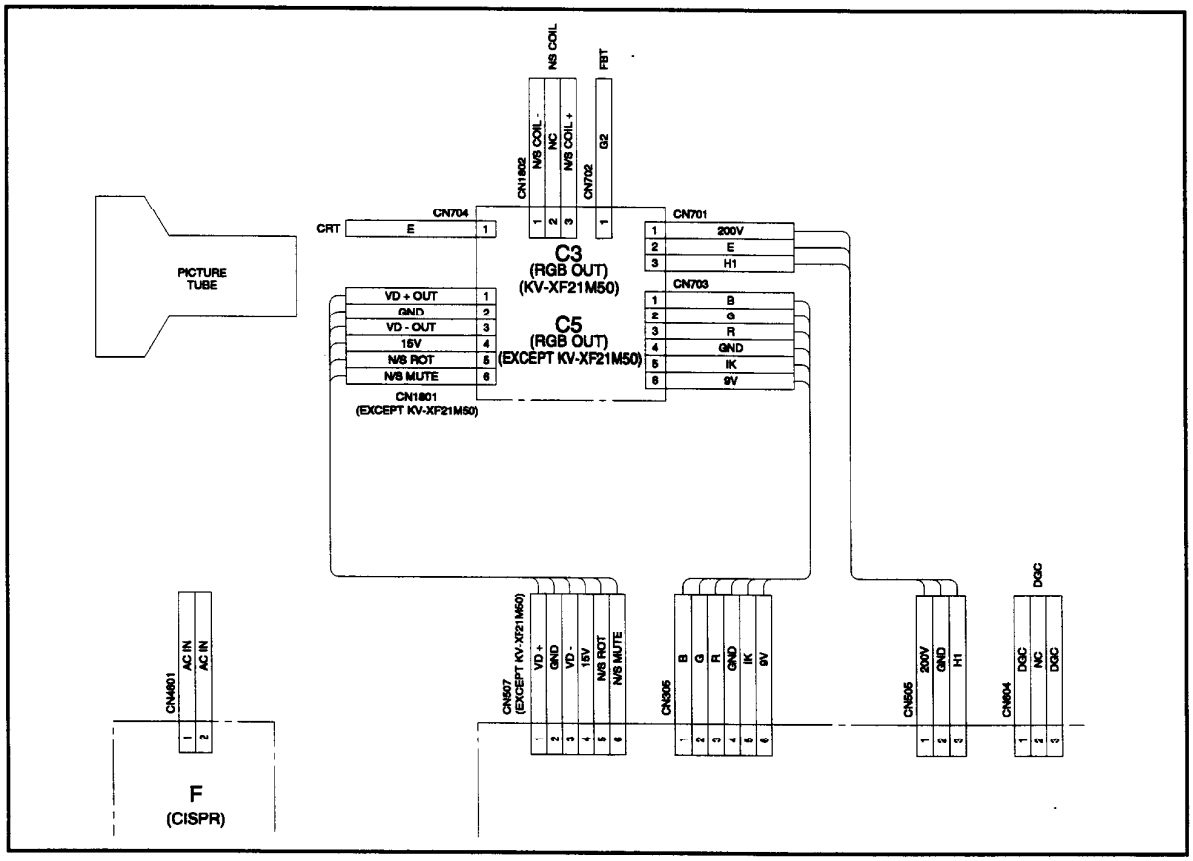
5-1. BLOCK DIAGRAM

(see page 39 ~ 41)

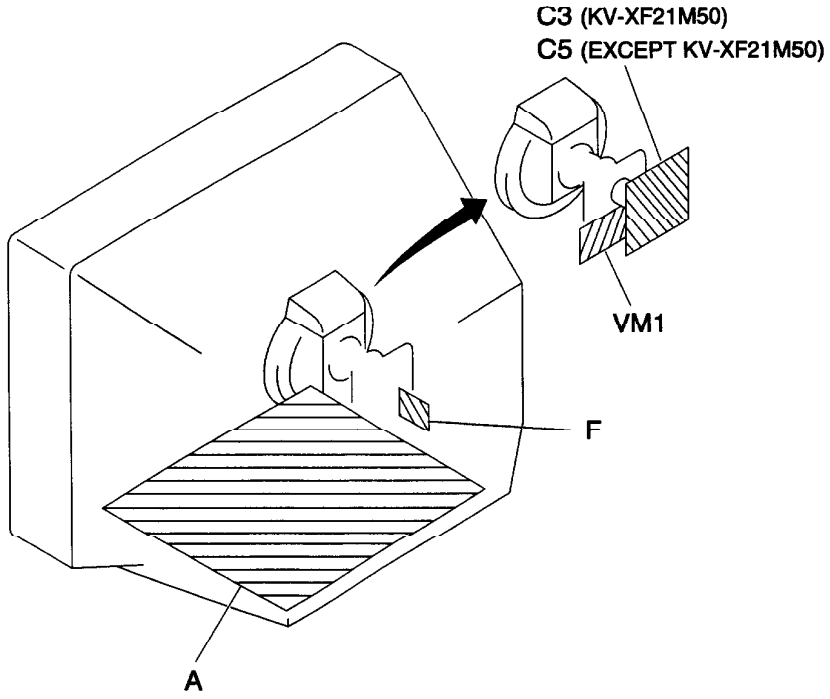


5-2. FRAME SHCEMATIC DIAGRAM

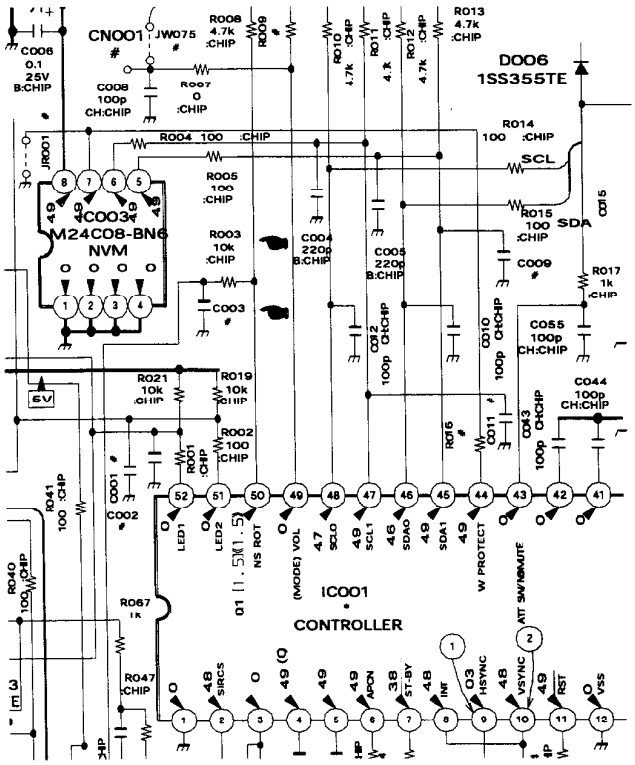
(see page 42 ~ 44)



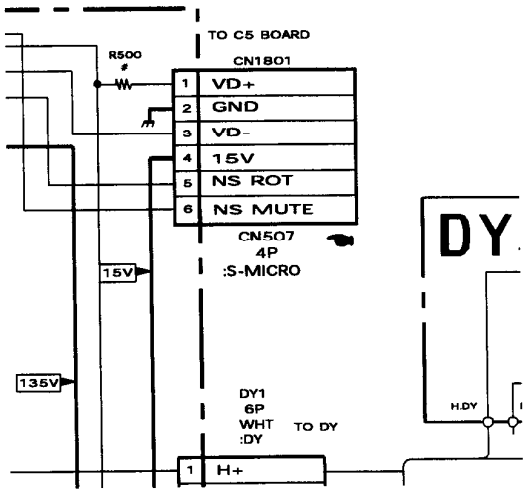
5-3. CIRCUIT BOARDS
(see page 45)



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS
(see page 49 ~ 55)

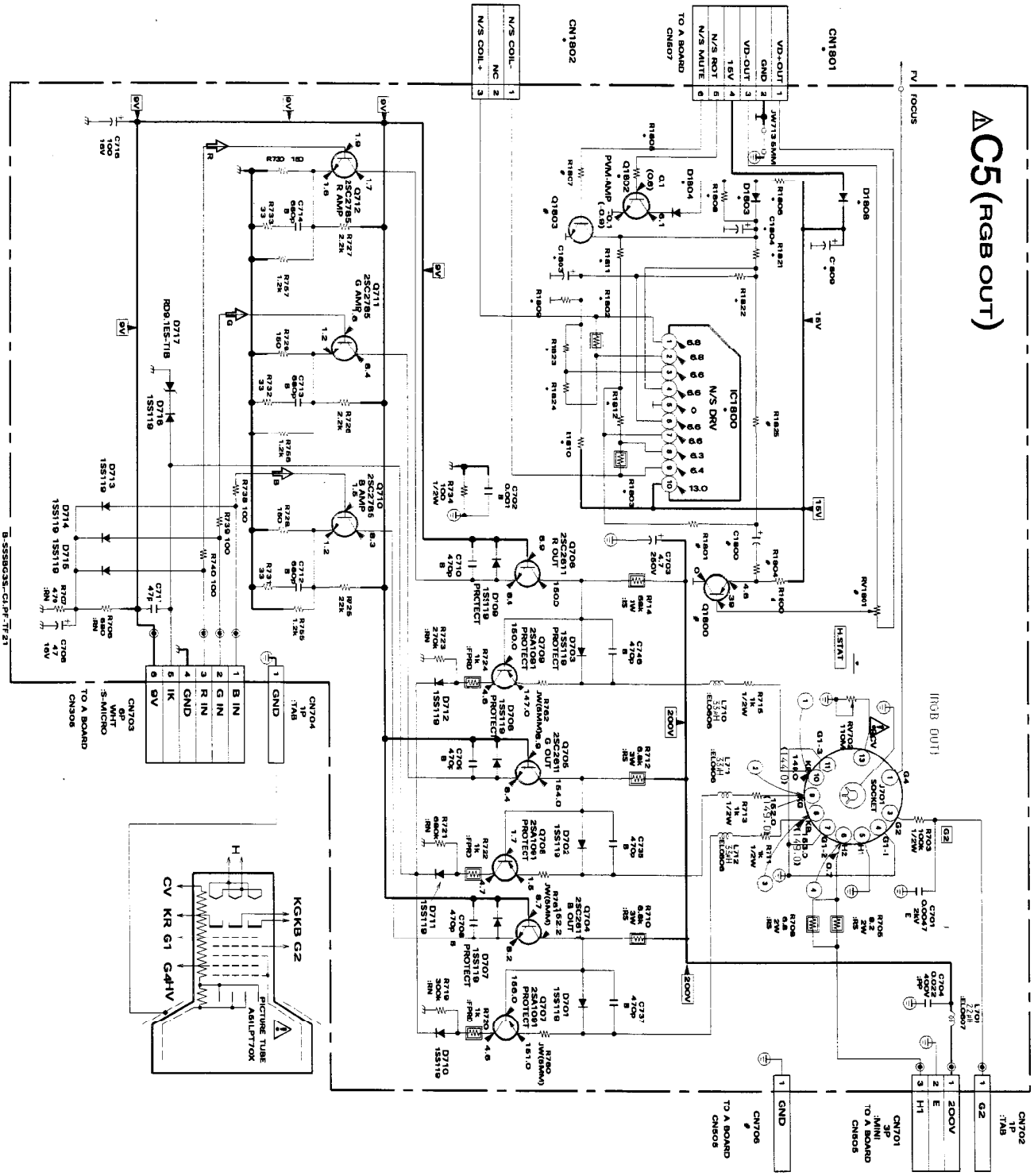


Page 1/2



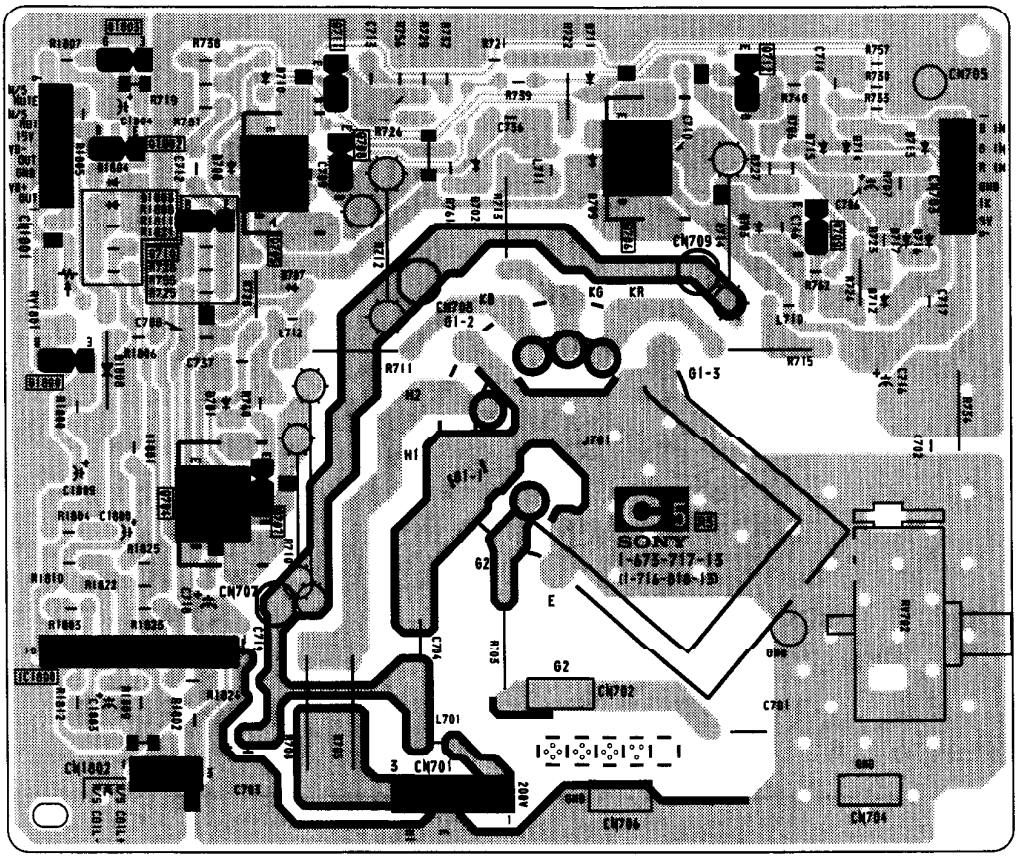
Page 2/2

Schematic Diagrams of C5 board
(see page 57 ~ 59)



PRINTED WIRING BOARDS
(see page 60)

– C5 Board –

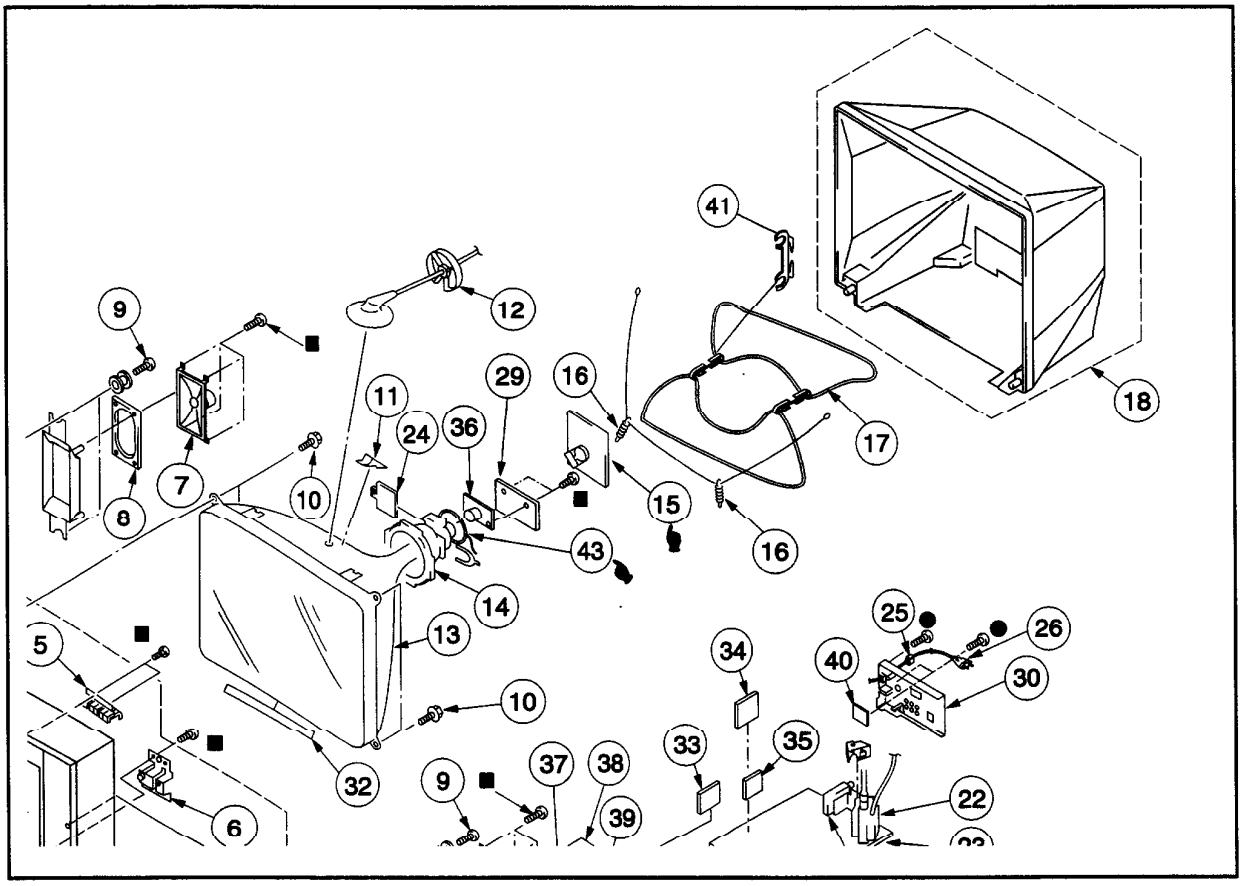


PWB Part number : 1-716-818-13 PWB COMBINED, C5
1-673-717-13 PWB, C5

SECTION 6. EXPLODED VIEW

6-1. CHASSIS

(see page 67)



REF. NO.	PART NO.	DESCRIPTION
15	* A-1331-941-A	C5 BOARD, MOUNTED (EXCEPT KV-XF21M50)
43	1-452-728-41	COIL, NA ROTATION (RT-154) (EXCEPT KV-XF21M50)

SECTION 7. ELECTRICAL PARTS LIST

(see page 70)

A

PART DELETION

REF. NO.	PART NO.	DESCRIPTION
C003	1-163-251-11	CERAMIC CHIP 100PF (EXCEPT KV-XF21M50)

(see page 72)

PART ADDITION

REF. NO.	PART NO.	DESCRIPTION
CN507	1-564-507-11	PLUG, CONNECTOR 4P (EXCEPT KV-XF21M50)

(see page 73, 75 & 81)

PART CHANGE

REF. NO.	PART NO.	DESCRIPTION	SERIAL NO.
IC001	8-752-906-21	IC CXP86449-623S (KV-XF21M30)	
R003	1-216-073-00	RES, CHIP 10K (EXCEPT KV-XF21M50)	
IC001	8-752-906-21	IC CXP86449-623S (KV-XF51M65)	

C5

REF. NO.	PART NO.	DESCRIPTION			
	* A-1331-941-A	C5 BOARD MOUNTED			
		**********			
		(EXCEPT KV-XF21M50)			
	7-682-948-01	SCREW +PSW 3X8			
		<CAPACITOR>			
C701	1-115-350-51	CERAMIC	0.0047MF		2KV
C702	1-102-074-00	CERAMIC	0.001MF	10%	50V
C703	1-107-651-11	ELECT	4.7MF	20%	250V
C704	1-130-202-00	FILM	0.022MF	5%	400V
C706	1-104-664-11	ELECT	47MF	20%	16V
C708	1-102-114-00	CERAMIC	470PF	10%	50V
C709	1-102-114-00	CERAMIC	470PF	10%	50V
C710	1-102-114-00	CERAMIC	470PF	10%	50V
C712	1-102-116-00	CERAMIC	680PF	10%	50V
C713	1-102-116-00	CERAMIC	680PF	10%	50V
C714	1-102-116-00	CERAMIC	680PF	10%	50V
C716	1-126-933-11	ELECT	100MF	20%	16V
C717	1-101-880-00	CERAMIC	47PF	5%	50V
C736	1-102-114-00	CERAMIC	470PF	10%	50V
C737	1-102-114-00	CERAMIC	470PF	10%	50V
C746	1-102-114-00	CERAMIC	470PF	10%	50V
C1803	1-126-964-11	ELECT	10MF	20%	50V
C1804	1-126-964-11	ELECT	10MF	20%	50V
C1809	1-126-942-61	ELECT	1000MF	20%	25V
		<CONNECTOR>			
CN701	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
CN702	1-695-915-11	TAB (CONTACT)			
CN703	* 1-564-509-11	PLUG, CONNECTOR 6P			
CN704	1-695-915-11	TAB (CONTACT)			
CN1801	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN1802	* 1-564-506-11	PLUG, CONNECTOR 3P			
		<DIODE>			
D701	8-719-911-19	DIODE 1SS119-25			
D702	8-719-911-19	DIODE 1SS119-25			
D703	8-719-911-19	DIODE 1SS119-25			
D707	8-719-911-19	DIODE 1SS119-25			
D708	8-719-911-19	DIODE 1SS119-25			
D709	8-719-911-19	DIODE 1SS119-25			
D710	8-719-911-19	DIODE 1SS119-25			
D711	8-719-911-19	DIODE 1SS119-25			
D712	8-719-911-19	DIODE 1SS119-25			
D713	8-719-911-19	DIODE 1SS119-25			
D714	8-719-911-19	DIODE 1SS119-25			
D715	8-719-911-19	DIODE 1SS119-25			
D716	8-719-911-19	DIODE 1SS119-25			
D717	8-719-121-26	DIODE RD9.1ESL2			
D1803	8-719-911-19	DIODE 1SS119-25			
D1804	8-719-911-19	DIODE 1SS119-25			
D1808	8-719-908-03	DIODE GP08D			

REF. NO.	PART NO.	DESCRIPTION			
		<IC>			
IC1800	8-759-822-38	IC LA6510			
		<JACK>			
Δ J701	1-540-071-22	SOCKET, CRT			
		<COIL>			
L701	1-410-667-31	INDUCTOR	22UH		
L710	1-408-613-31	INDUCTOR	68UH		
L711	1-408-613-31	INDUCTOR	68UH		
L712	1-408-613-31	INDUCTOR	68UH		
		<TRANSISTOR>			
Q704	8-729-326-11	TRANSISTOR 2SC2611			
Q705	8-729-326-11	TRANSISTOR 2SC2611			
Q706	8-729-326-11	TRANSISTOR 2SC2611			
Q707	8-729-200-17	TRANSISTOR 2SA1091-O			
Q708	8-729-200-17	TRANSISTOR 2SA1091-O			
Q709	8-729-200-17	TRANSISTOR 2SA1091-O			
Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q710	8-729-230-45	TRANSISTOR 2SC2458-YGR			
Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1802	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		<RESISTOR>			
R703	1-249-496-11	CARBON	100K	5%	1/2W
R705	1-216-380-11	METAL OXIDE	8.2	5%	2W F
R706	1-215-417-00	METAL	680	1%	1/4W
R707	1-215-413-00	METAL	470	1%	1/4W
R708	1-216-379-11	METAL OXIDE	6.8	5%	2W F
R710	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
R711	1-247-752-11	CARBON	1K	5%	1/2W
R712	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
R713	1-247-752-11	CARBON	1K	5%	1/2W
R714	1-215-922-11	METAL OXIDE	6.8K	5%	3W F
R715	1-247-752-11	CARBON	1K	5%	1/2W
R719	1-215-480-00	METAL	300K	1%	1/4W
R720	1-249-923-11	CARBON	1K	5%	1/4W F
R721	1-215-489-00	METAL	680K	1%	1/4W
R722	1-249-923-11	CARBON	1K	5%	1/4W F
R723	1-215-479-00	METAL	270K	1%	1/4W
R724	1-249-923-11	CARBON	1K	5%	1/4W F
R725	1-249-421-11	CARBON	2.2K	5%	1/4W
R726	1-249-421-11	CARBON	2.2K	5%	1/4W
R727	1-249-421-11	CARBON	2.2K	5%	1/4W
R728	1-249-407-11	CARBON	150	5%	1/4W
R729	1-249-407-11	CARBON	150	5%	1/4W
R730	1-249-407-11	CARBON	150	5%	1/4W
R731	1-249-407-11	CARBON	150	5%	1/4W
R732	1-249-407-11	CARBON	150	5%	1/4W

C5

REF. NO.	PART NO.	DESCRIPTION				
R733	1-249-406-11	CARBON	120	5%	1/4W	
R734	1-247-739-11	CARBON	100	5%	1/2W	
R738	1-247-807-31	CARBON	100	5%	1/4W	
R739	1-247-807-31	CARBON	100	5%	1/4W	
R740	1-247-807-31	CARBON	100	5%	1/4W	
R755	1-249-418-11	CARBON	1.2K	5%	1/4W	
R756	1-249-418-11	CARBON	1.2K	5%	1/4W	
R757	1-249-418-11	CARBON	1.2K	5%	1/4W	
R1802	1-249-387-11	CARBON	3.3	5%	1/4W	F
R1803	1-249-387-11	CARBON	3.3	5%	1/4W	F
R1805	1-249-429-11	CARBON	10K	5%	1/4W	
R1806	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1808	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1809	1-249-435-11	CARBON	33K	5%	1/4W	
R1810	1-249-435-11	CARBON	33K	5%	1/4W	
R1811	1-249-440-11	CARBON	82K	5%	1/4W	
R1812	1-249-435-11	CARBON	33K	5%	1/4W	
R1821	1-249-440-11	CARBON	82K	5%	1/4W	
R1822	1-249-435-11	CARBON	33K	5%	1/4W	
R1823	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1824	1-249-435-11	CARBON	33K	5%	1/4W	
		<VARIABLE RESISTOR>				
RV702	1-241-656-11	RES, ADJ, METAL FILM 110M				

****** * **********

REF. NO.	PART NO.	DESCRIPTION

(see page 90)

PART CHANGE

REF. NO.	PART NO.	DESCRIPTION	SERIAL NO.
		ACCESSORIES AND PACKING MATERIALS **********	
	3-865-541-32	MANUAL, INSTRUCTION (KV-XF21M30)	
	3-866-144-12	MANUAL, INSTRUCTION (KV-XF51M65)	

9-965-726-81

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SONY TV Industries (M) Sdn. Bhd.
TV Business of General Area

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